

# KFH GROUP, INC.

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## Greene County Transit Transit Development Plan

*Final Report*

December, 2011

Under Subcontract to:  
Cambridge Systematics

*Prepared for the:*

Greene County Transit  
and the  
Virginia Department of Rail and Public Transportation



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# Chapter 1

## Overview of Transit in Greene County

### INTRODUCTION

A Transit Development Plan (TDP) is a planning tool used to analyze the need for transit in a defined area, evaluate the services that are provided, and develop strategies to match the service to the identified transit needs. The Virginia Department of Rail and Public Transportation (DRPT) has an emphasis on investing in transit systems that are meeting the existing demand for public transportation, and have a desire to meet the growing demand for improved public transportation services through careful coordination of transit and land use planning. As such, DRPT requires that public transit operators receiving state funding prepare, adopt, and submit a TDP at least every six years.

The objective of this TDP is to assist Greene County Transit with updating their current TDP. In April 2011, Greene County Transit submitted a TDP to DRPT. This plan served as the foundation for this updated TDP that follows the DRPT TDP requirements and will:

- Meet the DRPT six year planning horizon,
- Serve as a management and policy document for Greene County Transit,
- Provide DRPT with information necessary for programming and planning,
- Provide DRPT with an up-to-date record of Greene County Transit's capital and operating budgets, and
- Provide Greene County Transit with the basis for including capital and operating programs in the Six Year Improvement Program (SYIP), Statewide Transportation Improvement Program (STIP), the Metropolitan Planning Organization's Transportation Improvement Program (TIP) and the Constrained Long Range Transportation Plan (CL RTP).

To help guide the TDP process, Greene County Transit formed a TDP Advisory Committee. The Committee included the Greene County Transit Director, operations staff, and a driver. In addition, the Committee includes a representative from the Greene County Public Schools, an individual who works with people in the community with transportation needs, and a Greene County Transit customer who also works with people in the community with mobility needs.

This chapter provides:

- Background information on Greene County and on the history of transit services in the County,
- An overview of Greene County Transit services, including governance and organizational structure, services provided, fare structure, current vehicle fleet, existing facilities, transit security program, and public outreach efforts.
- General information on other transportation services in the region.

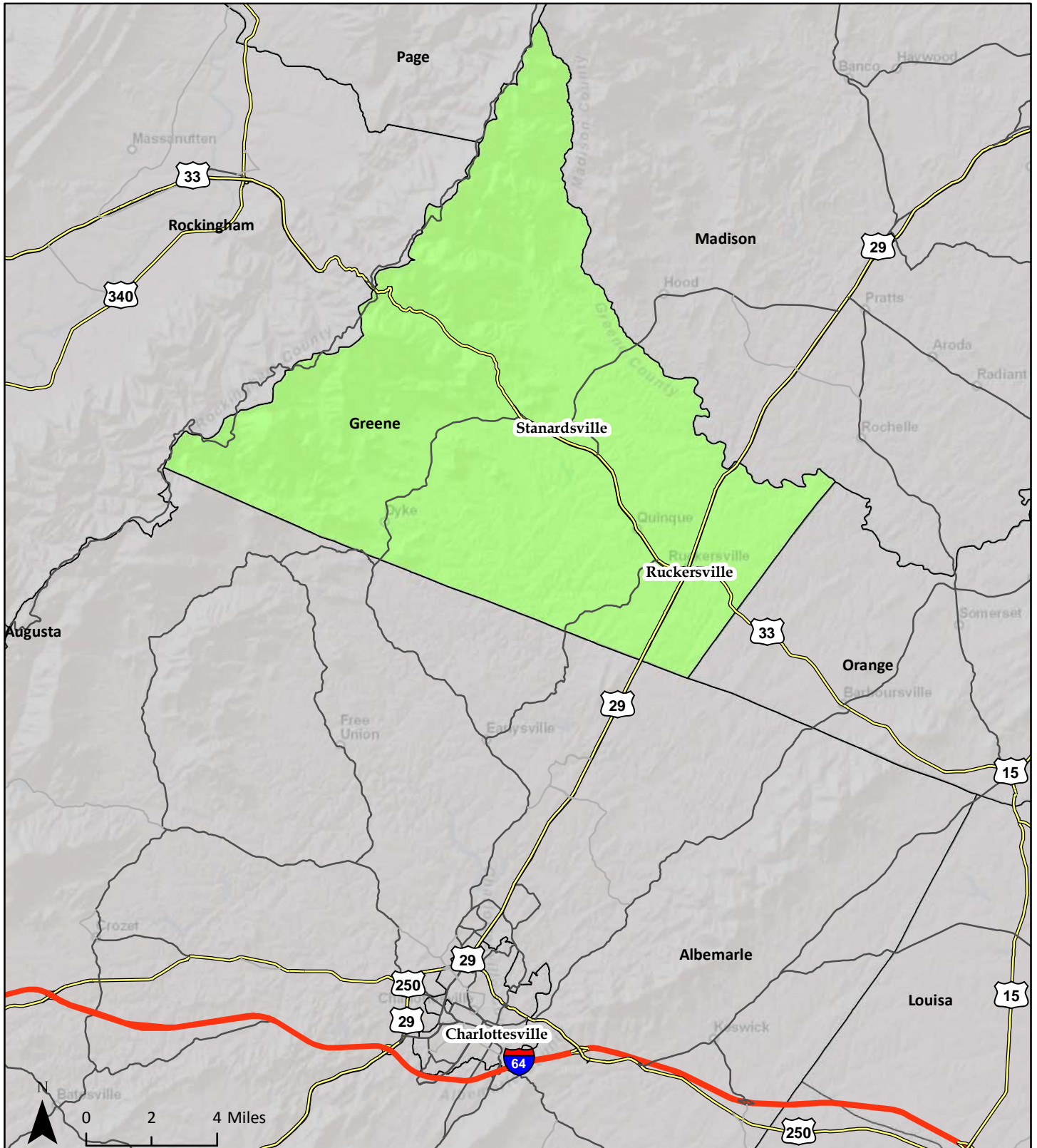
## BACKGROUND

Greene County is located in north central Virginia, immediately north of Charlottesville and east of Shenandoah National Park. Greene County is a primarily rural county, but the county is experiencing population growth. According to the United States Census Bureau, the 2010 population of Greene County was 18,403, up from 15,244 in 2000 and 10,297 in 1990. The majority of the growth has occurred in the southern portion of the county near Albemarle County and along the US 29 corridor. A map of Greene County is located in Figure 1-1.

Greene County is part of the Charlottesville Metropolitan Statistical Area (MSA) that also includes the City of Charlottesville, Albemarle, Fluvanna, and Nelson Counties. The Community Profile for the Charlottesville MSA provided by the Virginia Employment Commission reports that the area had a population of 201,559 in 2010, a 15.82% increase since 2000, and greater than the Commonwealth's overall change of 13.02%.

Greene County is connected to the surrounding region by two main transportation routes. US 29 runs through the eastern portion of the county providing direct access to the City of Charlottesville with Interstate 64 to the south and Culpeper to the north. US 33 connects Greene County to both Interstate 81 and the City of Harrisonburg to the west.

Figure 1-1: Greene County and Surrounding Areas



### Legend

— Freeway

— Other Major Road

— Secondary Road

— Local Road

  Greene County

  Adjacent Counties



Greene County Transit operates public transportation in the County. Greene County Transit provides door-to-door demand-responsive service throughout the County. In addition, Greene County Transit operates scheduled service to Charlottesville and Albemarle County.

## HISTORY

Greene County Transit began operation in 1976 with one driver and one 15-passenger vehicle. Greene County Transit was incorporated in 1995, and currently employs ten drivers and five office staff support personnel, and operates 16 vehicles. Various locations have been used for Greene County Transit operations since the system began operating. Currently, the transit office and vehicles are located in the Stanardsville Shopping Center. Greene County Transit began as a demand-response system, and continues to operate in this manner.

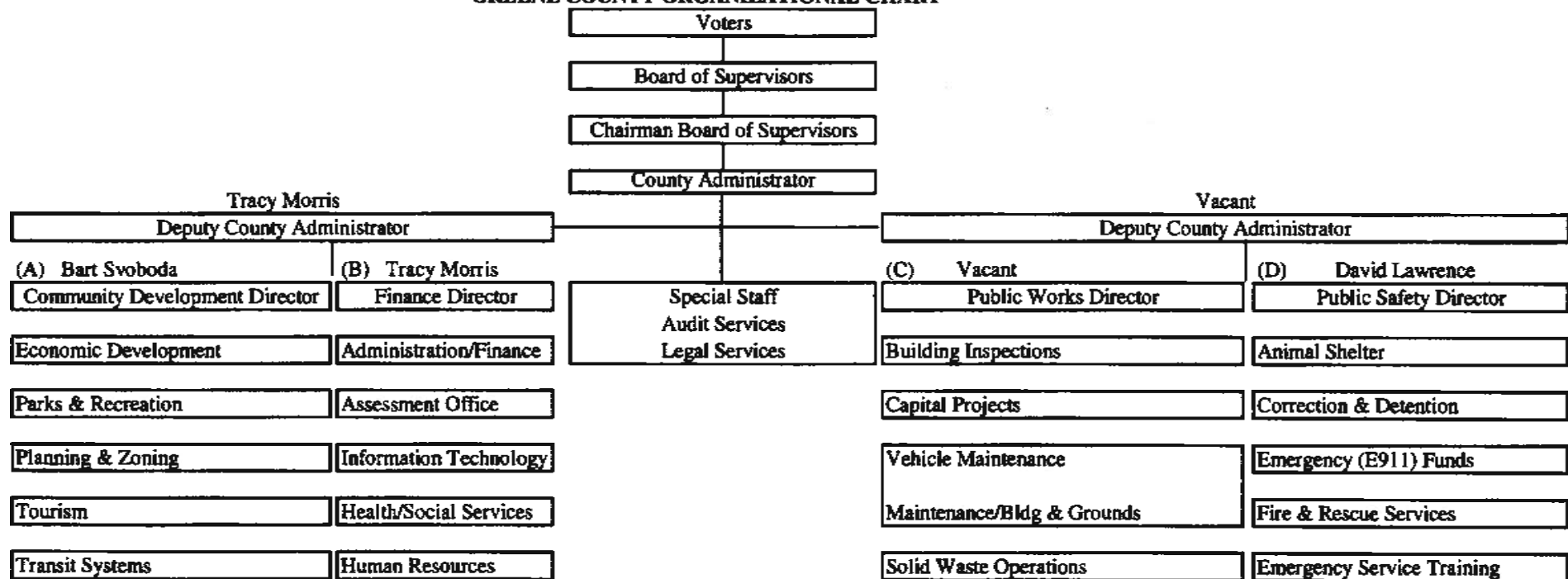
## GOVERNANCE AND ORGANIZATIONAL STRUCTURE

Greene County Transit operates under the umbrella of the governing body of Greene County. The County's Board of Supervisors consists of five members elected from the various districts within the County. This elected Board of Supervisors governs all of the county's governmental departments. The organization chart for Greene County is located in Exhibit 1-1.

The transit manager governs the transit staff, grant funding, and day-to-day transportation operations. The transit manager attends monthly meetings with the County's administrator and all department heads for the purpose of sharing information on how to meet the needs of Greene County citizens and ensure transit service efficiency. The transit manager has a direct link to DRPT's district overseer for the purpose of identifying and attaining grant funding, ensuring conformity to Federal Transit Administration (FTA) regulations, and meeting the demands of other pertinent regulating authorities. The transit manager is also responsible for marketing efforts and financial management.

An organizational chart for Greene County Transit from the previous TDP is provided in Exhibit 1-2.

# GREENE COUNTY ORGANIZATIONAL CHART



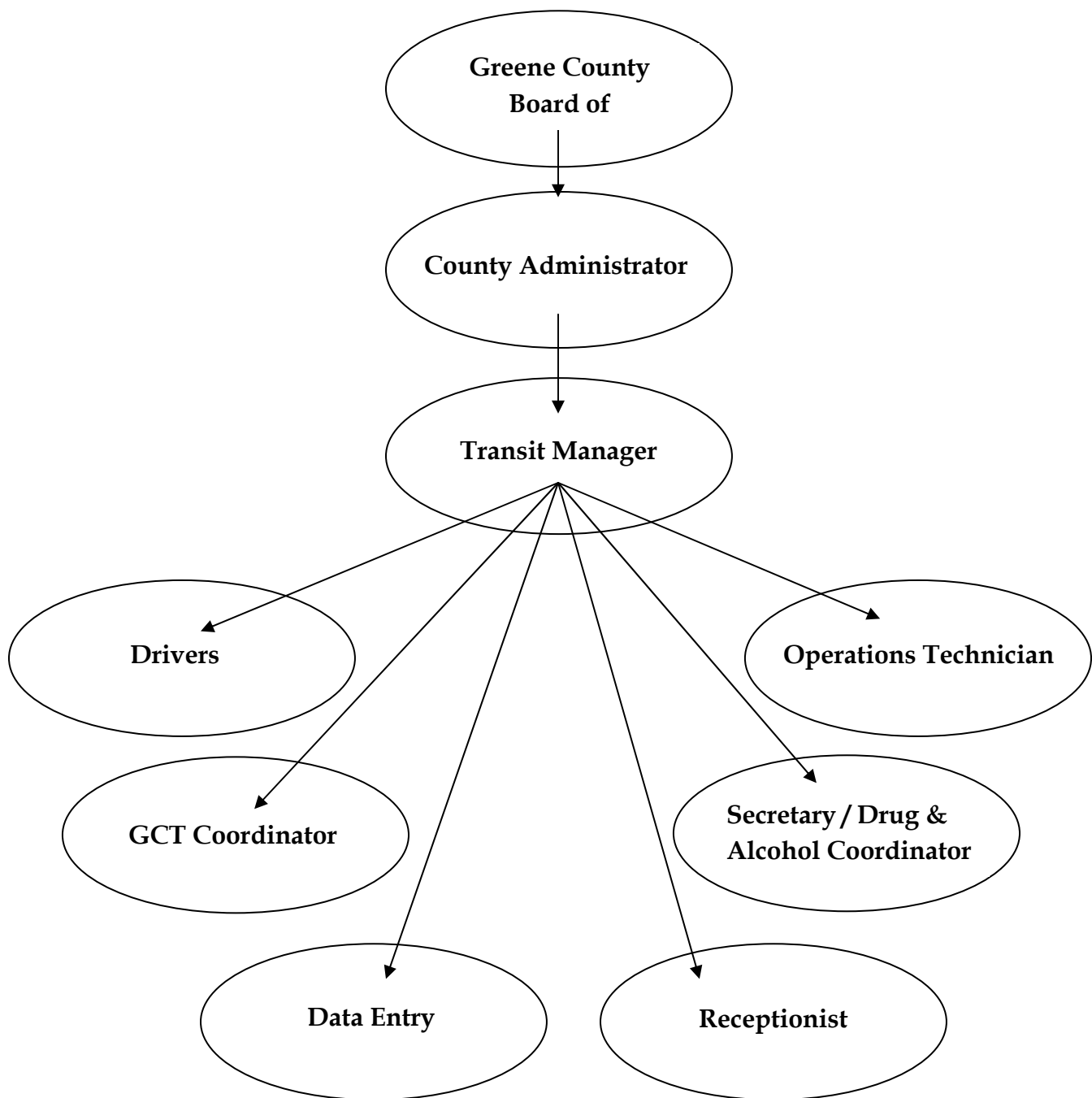
Liason With:

- Board of Equalization (B)
- Commissioner of the Revenue (B)
- Greene County BZA (A)
- Greene County EDA (A)
- Greene County Planning Commission (A)
- Jefferson Area Board for Aging (B)
- Jefferson-Madison Regional Library (B)
- Piedmont Housing Alliance (A)
- Piedmont VA Community College (B)
- Region Ten Community Services (B)
- Registrar (B)
- School Board (B)
- Shelter for Help in Emergency (B)
- Sky Line Cap (A)
- Social Services Board (B)
- Thomas Jefferson Health District (B)
- Thomas Jefferson Planning District Commission (A)
- Treasurer (B)

Liason With:

- Circuit Court (D)
- Clerk of Circuit Court (D)
- Commonwealth Attorney (D)
- Fire Departments (D)
- General District Court (D)
- Greene County Building Bd of Appeals (C)
- Jefferson Area Disability Services Bd (C)
- Juvenile & Domestic Relations Court (D)
- Juvenile Detention Facility (D)
- Magistrate (D)
- Office of Emergency Services (D)
- Rescue Squad (D)
- Sheriff's Office (D)
- Soil Conservation Service (C)
- Thomas Jefferson Area Community Criminal Justice Bd (D)
- VA Cooperative Extension Service (C)

Exhibit 1-1



**Exhibit 1-2: Greene County Transit, Inc. Organizational Chart**

## TRANSIT SERVICES PROVIDED AND AREAS SERVED

Greene County Transit is a demand-responsive transportation system with door-to-door service for the general public, with a focus on people in the County with limited mobility options. Customers include older adults, people with disabilities, local workers, shoppers, and others with a need for transportation services. Common destinations include doctor offices, pharmacies, libraries, the senior center, sporting events, employment centers, and major shopping destinations. Trips are requested through telephone call-in or can be arranged in person through the Greene County transit offices.

Greene County Transit provides demand-response services within the County Monday through Friday from 6:30 a.m. to 10:00 p.m., and on Saturday from 9:00 a.m. to 4:00 p.m. Greene County Transit also operates scheduled transportation services to Charlottesville and Albemarle County beginning at 6:30 a.m., 8:00 a.m., and 11:00 a.m. Monday through Friday. Return service to Greene County departs Charlottesville at 8:30 a.m., 11:00 a.m., and 2:30 p.m. The scheduling to Charlottesville and Albemarle County requires a 24-hour call ahead to the transit office.

## FARE STRUCTURE

Greene County Transit's fare structure is set at \$2.50 per one-way trip for trips within Greene County and \$3.00 per one-way trip for trips originating and ending in Charlottesville or Albemarle County. Because all trips are demand-responsive, passengers are charged for scheduled trips in which they do not ride and fail to cancel. Senior citizens ride for free on Saturdays.

## VEHICLE FLEET

Greene County Transit's fleet consists of 17 vehicles. Sixteen vehicles are used in operations, and one vehicle serves as an emergency mobile office. Passenger capacity for each vehicle ranges between seven and 19. Eleven vehicles in the fleet are accessible to accommodate people who use wheelchairs. Transit vehicles used on services to Charlottesville and Albemarle County are equipped with bicycle racks. A complete listing of the existing fleet is provided in Table 1-1. Exhibit 1-3 provides an example of a Greene County bus.



Exhibit 1-3: Greene County Bus

**Table 1-1: Greene County Transit, Inc. Existing Fleet**

Fleet Number	Model Year	Manufacturer	Model and Type	Seating Capacity	Wheel-chair Stations	Mileage (9/19/11)	Condition
<b>Operations</b>							
C-6	2005	Chevrolet	Supreme	12	2	90,520	Fair
C-4	2005	Chevrolet	Supreme	12	2	154,313	Fair
C-7	2006	Chevrolet	Supreme	17	0	112,965	Good
C-8	2007	Chevrolet	Supreme	17	0	104,892	Good
D-4	2007	Dodge	Caravan	8	0	85,648	Good
C-11	2008	Chevrolet	Supreme	14	2	74,134	Good
C-12	2008	Chevrolet	Supreme	14	2	89,221	Good
C-10	2008	Chevrolet	Uplander	7	0	83,471	Good
C-3	2009	Chevrolet	Supreme	14	2	36,756	Good
C-13	2009	Chevrolet	Supreme	14	2	65,963	Good
F-1	2010	Ford	E350	14	2	19,297	Excellent
C-14	2010	Chevrolet	Supreme	14	2	14,414	Excellent
D-1	2010	Dodge	Caravan	7	1	16,975	Excellent
D-3	2010	Dodge	Caravan	7	0	3,153	Excellent
C-15	2011	Chevrolet	Supreme	14	2	11,894	Excellent
C-1	2011	Chevrolet	Supreme	14	2	15,185	Excellent
<b>Other (Mobile Office)</b>							
C-2	2001	Chevrolet	Supreme	18	0	143,085	

The maintenance of Greene County Transit vehicles is provided by the Greene County Vehicle Maintenance Facility. The current agreement establishes a lease rate of \$2,400 per month and runs through November 2013.

## EXISTING FACILITIES

The administrative and operations offices of Greene County Transit are located in a leased facility regulated by the Jefferson Land & Realty Company of Rochelle, Virginia and located within the Stanardsville Shopping Center. The front of this complex is shown in Exhibit 1-4. Vehicles are housed in a lot to the side and in the rear of the shopping center. While the lot is fenced, it is shared by other shopping center tenants and often the gate is not secured. There has been vandalism to some Greene County Transit vehicles, mainly from rocks being thrown over the fence.



Exhibit 1-4: Greene County Facility

## TRANSIT SECURITY PROGRAM

Greene County Transit has adopted a comprehensive hazard and security preparedness plan for the safety and security of its employees and transit riders. A Hazard and Security Plan is reviewed annually by managers and employees.

Security upgrades to the transit offices have included enclosing the employee work area apart from the customer waiting area and the installation of a key pad entrance door into the work area that requires visitors to be allowed in before entering the employee office area.

Greene County Transit has duplicated its electronic data on external software to prevent the loss of information in the event of computer failures. With a grant from DRPT, Greene County Transit has constructed an “Emergency Mobile Office Vehicle” (C-2 in the fleet inventory) that is equipped with laptop computers, telephones, fax machine, printers, and other necessary office equipment capable of serving as a fully functioning office in the event the primary office is unavailable.

Transit vehicles are equipped with anti-theft devices to prevent intruders from operating vehicles. All transit riders must wear safety belts during their transport. Finally, all transit vehicles receive regular maintenance services to ensure safe and proper operation.

All transit drivers are regulated to start each day with a maximum of \$20 in fare bags. At the end of each shift, all monies are secured in the transit office until they are deposited at the county Treasurer’s Office twice weekly.

## PUBLIC OUTREACH

Greene County Transit conducts a variety of outreach efforts to help ensure the community is aware of their services. The operations technician attends various county agency meetings to provide information on the services and opportunities for use of Greene County Transit. These agencies include the Jefferson Area Board for the Aging, Department of Social Services, Greene County Library, and Ripley Haney Child Care.

Local television and radio stations, along with various newspaper agencies, have been utilized to market Greene County Transit. Additional advertising on the outside of transit vehicles further informs the general public of the presence of the transit agency.

Surveys of clientele, including phone surveys of potential clientele, are utilized to understand how Greene County Transit can better serve the community. Finally, flyers and notices are distributed throughout the county to inform the general public of service opportunities.

## **OTHER TRANSPORTATION SERVICES**

### **Other Public Transportation Services in the Region**

As noted previously in this chapter, Greene County Transit provides service to Charlottesville. When feasible, services are coordinated with JAUNT, the regional transportation system providing service in Charlottesville as well as Albemarle, Fluvanna, Louisa, Nelson, Buckingham, and Amherst Counties. Charlottesville Area Transit (CAT) also provides bus service in the Charlottesville area.

The Foothills Express Bus Service, a service of the Foothill Area Mobility System (FAMS) administered by the Rappahannock-Rapidan Regional Commission and operated by JAUNT, provides transportation between Culpeper, Madison, and Charlottesville. While this service operates along US 29 through Greene County, there are no scheduled stops in the County.

### **Taxi Companies**

Previous studies and Yellow Page listings identified several private transportation providers operating in Greene County. However, only the following company was found to have a working telephone and is apparently operating in the County:

- ABA Cab Taxi Service, Ruckersville

### **Inter-city Bus Services/Amtrak**

The closest inter-city bus and train stations for Greene County are located in Charlottesville.

### **Medicaid Transportation**

Medicaid transportation is arranged by Logisticare for this area of Virginia.

## Chapter 2

# Goals, Objectives, and Standards

### INTRODUCTION

This chapter presents a set of goals, objectives, and standards for Greene County Transit, building upon information in the previous TDP and incorporating input from staff, the TDP Advisory Committee, and DRPT. This chapter also discusses issues, concerns, and opportunities presented through the previous plan and by the Committee. This section also provides discussion of service standards. These standards are critical for addressing both the efficiency and effectiveness of the services provided by Greene County Transit.

### GOALS AND OBJECTIVES

The overall goal of Greene County Transit is to provide a safe, reliable, efficient, and effective transportation service to all citizens of Greene County and for anyone wishing to use public transportation. The pursuit of this goal is accomplished through a variety of objectives that include:

- Offering transit services that provide mobility in the Greene County Transit service area, especially for older adults and people with disabilities.
- Providing excellent customer service through timely service, well-trained drivers, and comfortable accommodations.
- Providing reliable services that benefit local businesses, human and social service agencies, medical facilities, and other service providers in the County.
- Maintaining efficient scheduling and routing practices to ensure a short wait time for customers as possible.

- Responding to customer needs through appropriate service changes.
- Ensuring safe and secure services through appropriate driver training, security measures (i.e. anti-theft devices on vehicles, customer waiting area).
- Performing proper vehicle maintenance and appropriate cleaning of buses.
- Coordinating with human service and other agencies to connect the people these organizations serve to available transit services.
- Working with DRPT on capital and operational funding applications and on compliance with state and federal regulations.

Greene County Transit's goals also include being an integral component of economic development in Greene County by providing access to jobs, health care, shopping, education, and other community locations, and enhancing economic development by improving access to local businesses. The services provided by Greene County Transit are tailored to meet the mobility needs of people who live in rural areas, and support the economic well-being of County residents and enable self-sufficiency by providing critical access to jobs and other community locations. Without Greene County Transit's services, some County residents would have limited or no access to employment opportunities.

Overall, Greene County Transit strives to promote and impact economic development by:

- Providing employment opportunities at Greene County Transit,
- Purchasing goods and services in the local community,
- Contracting with local vendors for fuel, maintenance, and other support functions,
- Allowing older adults to remain in their homes in the community by providing access to health care providers, social services, and recreational opportunities,
- Linking employers with potential employees and a broader workforce,
- Enabling unemployed and underemployed workers with access to jobs and employment training opportunities to assist them in achieving economic self-sufficiency, and reducing the possible need to rely on social programs,

- Ensuring the success of welfare-to-work initiatives by providing access to jobs for welfare recipients, and
- Permitting students to continue their education by providing access to educational opportunities.

As noted, these goals and objectives were developed with input from the TDP Advisory Committee that was formed for the TDP planning process. While many will be ongoing, Greene County Transit will also need a process for reviewing these goals and objectives. One way to ensure to facilitate this process is to establish an Advisory Committee that can provide input on a regular basis. This Committee is detailed in Chapter 4.

## ISSUES, CONCERNS, AND OPPORTUNITIES

During the initial TDP Advisory Committee meeting, the critical link that Greene County Transit provides for many County residents to jobs and other locations was stressed. The Committee reinforced the role of Greene County Transit as a “lifeline” to the community and that many people in Greene County depend on public transit services, especially to access employment opportunities. The Committee noted that based on current input from customers, most needs are being met. However, the Committee reinforced the need to maintain current services since so many customers depend on Greene County Transit as their primary form of transportation. Also, the Committee stressed the need to maintain the current demand-response services operated by Greene County Transit that they feel best meets the needs of County residents, and fits the rural nature of the County.

While there are funding constraints, the Committee looked forward to the updated TDP including potential service improvements that can be implemented if funding does become available. The current TDP notes that as the population grows in the County, Greene County Transit anticipates an increase in the need for public transportation. Due to the rural nature of the County, it is anticipated that this increase would be primarily for demand-response services.

Another concern expressed by the Committee was the need for affordable transit services. Some customers have expressed the desire for free transit services, and one Committee member noted that some customers pay their fare in pennies, highlighting the critical need for affordable services and the economic status of some Greene County Transit customers. Also, the system previously evaluated a potential zone fare structure, but it was determined that no changes should be made at that time.

An additional issue is the safety of the vehicle fleet. Currently vehicles are housed in a lot by the Greene County Transit offices that are located in a small shopping center. While the lot is fenced, it is shared by other shopping center tenants and often the gate is not secured. There has been vandalism to some Greene County Transit vehicles, mainly from rocks being thrown over the fence.

While current services meet many of the transportation needs for young people in the County, the Committee also noted there is an opportunity to do more.

## **SERVICE STANDARDS**

Service standards are benchmarks by which service performance is evaluated. Service standards are typically developed in several categories of service, such as service coverage, passenger convenience, fiscal condition, and passenger comfort. The most effective service standards are straightforward and relatively easy to calculate and understand. Service standards provide specific and measurable ways to determine if Greene County Transit is meeting its goals and objectives.

Table 2-1 presents service standards suggested for Greene County Transit that can help to evaluate service on a regular basis to ensure that the system is carrying out its mission in the most effective manner possible.

## **PROCESS FOR DEVELOPING AND UPDATING GOALS, OBJECTIVES, AND SERVICE STANDARDS**

These draft goals, objectives, and service standards were developed as a component of the 2011 TDP for Greene County Transit. It is recommended that the system examine these goals, objectives, and service standards on an annual basis to ensure that they are appropriate and in keeping with what the system is experiencing. If additional goals are envisioned, or if specific goals, objectives, or standards are no longer appropriate, represent under-achievement, or cannot be reasonably attained, Greene County Transit staff can update these measures to reflect new circumstances.

In addition to an in-house staff review of these measurement tools, it is also recommended that the Transportation Advisory Committee (the creation of which is a recommendation of this TDP and is detailed in Chapter 4) also review the goals, objectives, and service standards annually, following the Greene County Transit staff review. It is recommended that this annual review take place as part of the grant preparation cycle. Any changes for these measurement tools can be included in the annual TDP update.

Table 2-1: Service Standards

Category	Standard
<b>Availability</b>	<p><i>Service availability is a direct reflection of the level of financial resources available for the transit program. Service coverage and span of service are considered under the category of "availability."</i></p> <p><b>Service Coverage:</b></p> <ul style="list-style-type: none"> <li>• Residential areas: <ul style="list-style-type: none"> <li>◦ Areas with concentrations of transit dependent people</li> </ul> </li> <li>• Multi-Family housing complexes with over 25 units</li> <li>• Major activity centers: <ul style="list-style-type: none"> <li>◦ Employers or employment concentrations of 200+</li> <li>◦ Health centers</li> <li>◦ Middle and high schools</li> <li>◦ Colleges/universities</li> <li>◦ Shopping centers of over 10 stores or 100,000 sf</li> <li>◦ Social service/government centers</li> </ul> </li> </ul>
<i>The current span of service is for in-county demand response service is 6:30a.m. to 10:00 p.m., M-F, and 9:00 a.m. to 4:00p.m. on Saturdays.</i>	<p><b>Span:</b></p> <p>6:30 a.m. to 10:00 p.m. on weekdays</p> <p>9:00 a.m. to 6:00 p.m. on weekends</p>
	<b>Patron Convenience</b>
<b>Dependability</b>	No missed trips -- 95% on-time service (0 to 5 minutes late) -- No trips leaving early
	<b>Fiscal Condition</b>
<b>Farebox Recovery</b>	<p>Review and modify, if possible, services that exhibit less than 60% of average</p> <p>Review and modify, if warranted, services between 60% and 80% of average</p> <p>Average is currently 9%</p>
<b>Productivity (Passenger/revenue hour)</b>	<p>Review and modify, if possible, services that exhibit less than 60% of average</p> <p>Review and modify, if warranted, routes between 60% and 80% of average</p> <p>Average is currently 4.48 trips per revenue hour</p>

Category	Standard
<b>Cost Effectiveness (Cost per trip)</b>	Review and modify, if possible, services that exhibit less than 60% of average Average is currently \$9.67 per trip
<i>Passenger Comfort</i>	
<b>Public Information</b>	Timetable, maps, and website current and accurate
<b>Revenue Equipment</b>	Clean and good condition
<b>Safety</b>	<b>Incidents Per 100,000 Revenue Miles</b> .10 or fewer “reportable incidents” per 100,000 miles, as defined by the National Transit Database. A reportable incident is one in which one or more of the following conditions apply: <ul style="list-style-type: none"> <li>• A fatality</li> <li>• Injuries requiring medical attention away from the scene for one or more persons</li> <li>• Property damage equal to or exceeding \$25,000.*</li> </ul>

\*National Transit Database, 2010 Rural Reporting Manual.

## **Chapter 3**

# **Service and System Evaluation and Transit Needs Analysis**

### **INTRODUCTION**

While Chapter 1 provided an overview of Greene County Transit, this chapter presents data for the system as well as a comparison of this data to other similar transit systems in Virginia. In addition, this section provides a review of other relevant plans in the area that relate to public transit services. Finally, this chapter provides a transit needs analysis through a review of appropriate demographics and input from customers and stakeholders.

An essential task within the Greene County Transit TDP process is the acquisition of more information about current public transportation trip patterns, rider characteristics, rider satisfaction with the service, and suggestions for service improvements from the riders. In order to collect these data, an on-board rider survey was conducted in August, 2011. A copy of this survey is provided as Appendix A. The overall results of the survey are included in this chapter and specific results are incorporated into relevant sections of this chapter.

### **SERVICE AND SYSTEM EVALUATION**

#### **Trend Data**

Table 3-1 provides operating statistics for Greene County Transit for FY 2005 through FY 2010, and Table 3-2 provides performance data for the same period. Trends for each are then displayed in Figures 3-1 through 3-5.

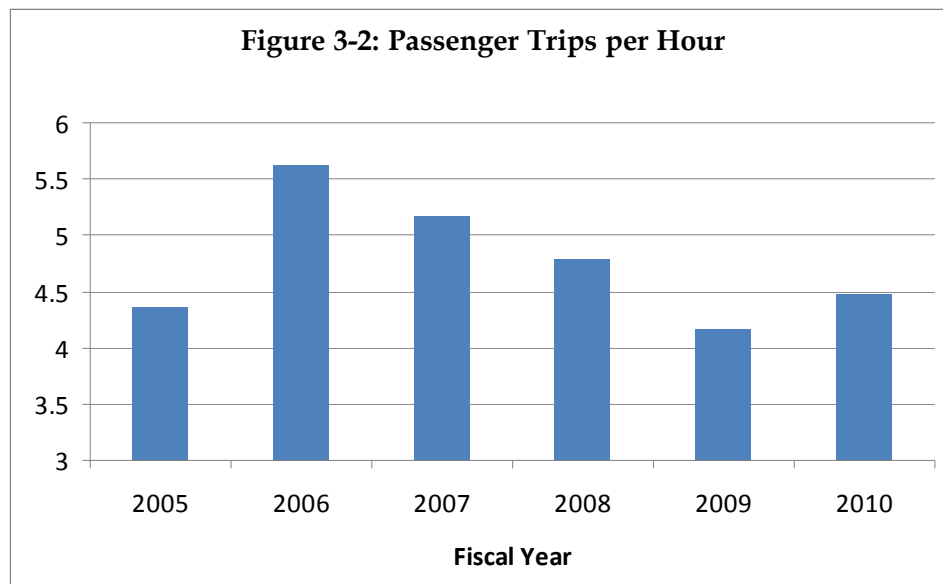
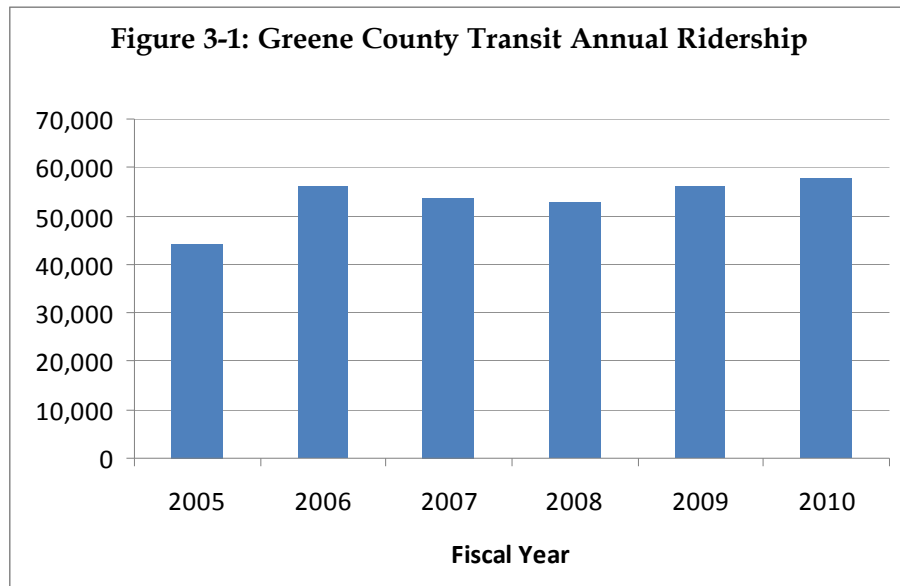
**Table 3-1: Operating Statistics for Greene County Transit**

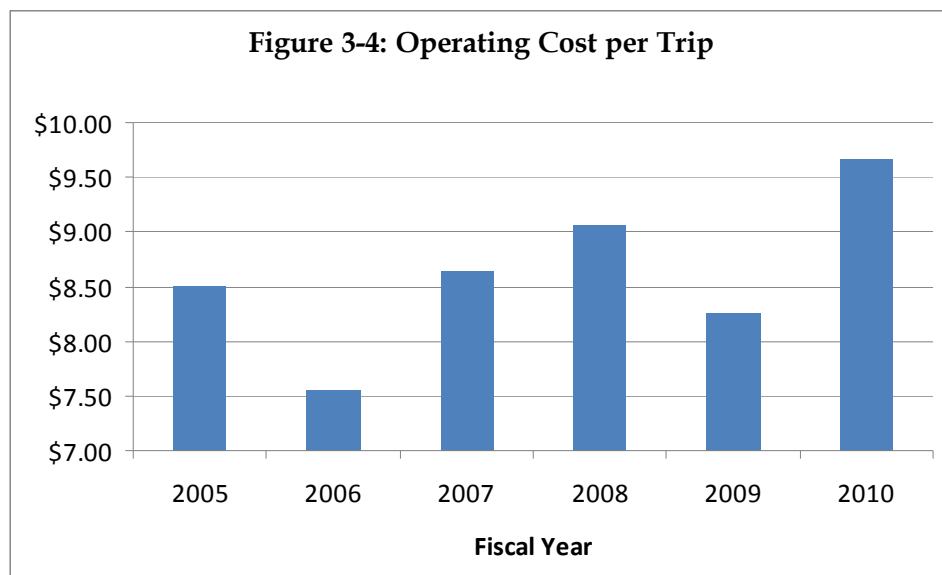
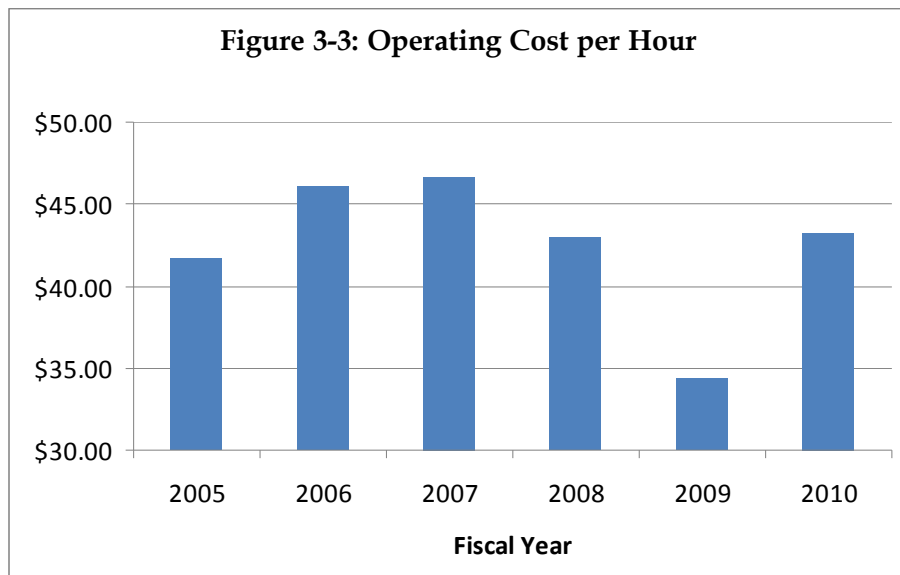
	Fiscal Year					
	2005	2006	2007	2008	2009	2010
Operating Data						
Passenger Trips	44,149	56,015	53,935	52,676	56,291	57,663
Vehicle Revenue Miles	219,892	214,951	225,797	246,307	264,419	297,799
Vehicle Revenue Hours	10,098	9,946	10,430	10,998	13,512	12,888
Total Operating Expenses	\$375,625	\$423,356	\$465,945	\$472,293	\$464,905	\$557,088
Fare Revenue	\$40,000	\$45,000	\$45,000	\$44,771	\$45,131	\$46,990

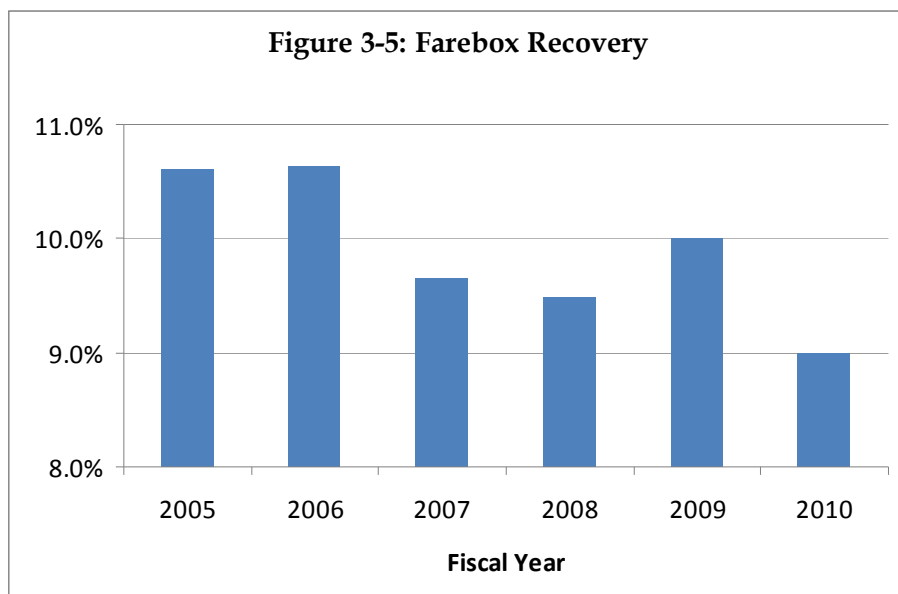
Sources: Virginia Transit Performance Report FY 2004-FY 2008; Greene County Transit, Inc.

**Table 3-2: Performance Data for Greene County Transit**

	Fiscal Year					
	2005	2006	2007	2008	2009	2010
Performance Data						
Passenger Trips per Hour	4.37	5.63	5.17	4.79	4.17	4.48
Passenger Trips per Mile	0.2	0.26	0.24	0.21	0.23	0.21
Operating Cost per Hour	\$41.75	\$46.10	\$46.69	\$42.94	\$34.41	\$43.23
Operating Cost per Mile	\$1.92	\$2.13	\$2.16	\$1.92	\$1.85	\$1.97
Operating Cost per Trip	\$8.51	\$7.56	\$8.64	\$9.06	\$8.26	\$9.67
Farebox Recovery	10.6%	10.6%	9.7%	9.5%	10%	9%







As shown, after an initial decline in annual ridership between FY 2006 and FY 2008, ridership has increased in the last two years to levels higher than reported in FY 2006, peaking in 2010 with 57,663 passengers. Since 2006, the operating cost per trip has increased from \$7.56 in 2006 to \$9.67 in 2010. This trend likely reflects the rise in fuel prices over the past five years.

### Operating Budgets

Table 3-3 presents operating budget data, including funding sources, for the Greene County Transit service. The table presents the actual costs and funding for FY10 service, which is now closed out, and the projected FY 2012 budget included in the Greene County Transit application to DRPT. It should be noted that estimated state funding for FY 2012 is based on the percentage funded by the Commonwealth in FY 2010. DRPT develops each system's state operating amount based on data from two years prior to the current application. State operating funds are only available to fund a portion of fuel, tires, maintenance, and parts expenses; and non-salary/non-fringe administrative expenses.

**Table 3-3: Greene County Transit Operating Budget: FY 2010 Actuals  
and FY 2012 Budget (from DRPT FY 2012 Grant Application)**

<b>Expenses:</b>	<b>Actual FY 2010</b>	<b>Budgeted FY 2012</b>
Salaries and Wages	\$358,900	\$410,682
Fringe Benefits	\$48,456	\$57,132
Education & Training	\$383	\$500
Cleaning Supplies	\$395	\$500
Education & First Aid Supplies	\$291	\$300
Motor Fuels and Lubricants	\$61,758	\$90,000
Tires and Tubes	\$5,901	\$6,000
Parts	\$24,584	\$26,000
Supplies and Materials (Other)	\$1,200	\$1,200
Data Processing Supplies	\$152	\$250
Tools & Machinery	\$500	\$500
Travel	\$944	\$1,000
Communication Services	\$2,080	\$2,400
Utilities	\$3,054	\$3,500
Printing and Reproduction	\$390	\$500
Advertising and Promotion Media	\$749	\$750
Drug Testing Supplies	\$1,214	\$2,000
Rental of Real Property	\$28,088	\$28,800
Rental of Other Equipment	\$3,000	\$4,800
Services and Maintenance Contracts	\$2,752	\$5,000
Insurance and Bonding	\$11,497	\$10,500
Professional Services	\$800	\$0
Fixed Charges (Other)	\$0	\$800
	<b>\$557,088</b>	<b>\$653,114</b>
Revenue--Fares, Advertising, etc.	\$46,990	\$49,000
Net Operating Deficit	\$510,098	\$604,114
Funding:		
FTA Section 5311	\$255,049	\$302,057
State Operating Assistance*	\$63,112	\$73,802
Local Operating Match	\$191,937	\$228,255
Total Operating Revenues:	<b>\$557,088</b>	<b>\$653,114</b>

\*Varies from year to year, calculated from FY10 as 11.3%.

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## Peer Review

While it is most valuable for a transit system to monitor its performance over time, it is also important to review operating statistics for transit programs that could be considered “peers,” in terms of location, service area characteristics, or size. Operating statistics on peer systems was obtained from the *Virginia Transit Performance Report* from six transit systems throughout Virginia for comparison to Greene County Transit for FY 2008. These systems include:

- RADAR/Covington & Clifton Forge
- Graham Transit – Town of Bluefield
- Blackstone Area Bus (BABS)
- Pulaski Area Transit
- STAR Transit

The results of the peer review are presented in Table 3-4. Although none of the peer systems are identical to Greene County Transit, each operates in a relatively rural area of the state and serves a population of no more than 50,000 people.

A further review of the peer data in regard to productivity indicates:

- Greene County Transit covers a greater percentage of its operating costs with fare revenue than the mean of the selected peer systems.
- For trips per hour, Greene County Transit exceeds only two of six peer systems. This statistic may correlate with the compactness of each transit provider’s service area. More compact service areas will often have more trips per hour than service providers that cover larger rural areas such as STAR Transit and Greene County Transit.
- Trips per mile indicate how many trips a transit provider serves relative to the number of miles the transit provider travels. As with trips per hour, Greene County Transit is below the mean, and this likely reflects the service area’s relatively rural character.
- Greene County Transit’s operating costs per hour are slightly above the mean, however, its costs per mile are slightly below the mean of the selected peer systems.

**Table 3-4: Peer Review Data**

Transit Program	Active Vehicle Fleet	Service Area Population	Vehicle Revenue Hours	Vehicle Revenue Miles	Passenger Miles	Passenger Trips	Operating Expenses	Fare Revenue	Farebox Recovery
Greene County Transit	15	17,500	10,998	246,307	228,283	52,676	\$ 472,293	\$ 44,771	9.5%
RADAR/Covington & Clifton Forge	2	25,000	2,484	43,896	43,896	13,249	\$ 134,628	\$ 6,543	4.9%
Town of Bluefield - Graham Transit	4	6,000	7,240	132,000	132,000	40,754	\$ 210,389	\$ 10,637	5.1%
Blackstone Area Bus (BABS)	8	6,000	4,440	75,143	21,292	17,744	\$ 131,143	\$ 8,225	6.3%
Pulaski Area Transit	9	49,000	8,060	89,175	88,500	55,384	\$ 290,539	\$ 35,373	12.2%
STAR Transit	8	50,000	15,245	341,544	341,544	40,342	\$ 518,744	\$ 55,878	10.8%
Mean	6.6	21,929	6,924	132,581	122,216	31,450	\$ 251,105	\$ 23,061	7%

Transit Program	Trips/ Hour	Trips/ Mile	Cost/ Hour	Cost/ Mile
Greene County Transit	4.79	0.21	\$ 42.94	\$ 1.92
RADAR/Covington & Clifton Forge	5.33	0.30	\$ 54.20	\$ 3.07
Town of Bluefield - Graham Transit	5.63	0.31	\$ 29.06	\$ 1.59
Blackstone Area Bus (BABS)	4.00	0.24	\$ 29.54	\$ 1.75
Pulaski Area Transit	6.87	0.62	\$ 36.05	\$ 3.26
STAR Transit	2.65	0.12	\$ 34.03	\$ 1.52
Mean	4.18	0.26	\$ 32.26	\$ 1.87

**Source: Virginia Transit Performance Report, FY 2008 Data**

- Operating Data and Performance Indicators from "Public Transportation Fixed Route, Route Deviation, and Demand Reponse Services" category
- Operating Expenses and Fare Revenue are systemwide

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## Customer Trip Patterns

### *Trip Logs*

Since Greene County provides demand-response services throughout the County, there are no specific routes to evaluate or assess customer trip patterns. However, in an effort to better understand travel patterns of Greene County Transit's customers, trip logs were obtained from Greene County Transit that represented a variety of service days and times. To gain a better perspective on these patterns, trip origins and destinations were electronically plotted using mapping software.

As shown in Figure 3-6, this analysis confirms clusters of transit activity anticipated from the mapping of likely trip generators. A majority of trip origins and destinations within the county are located near the communities of Ruckersville and Stanardsville and along the Route 29 corridor in the southeastern portion of the county. It should also be noted that there were many requested trips to and from Charlottesville.

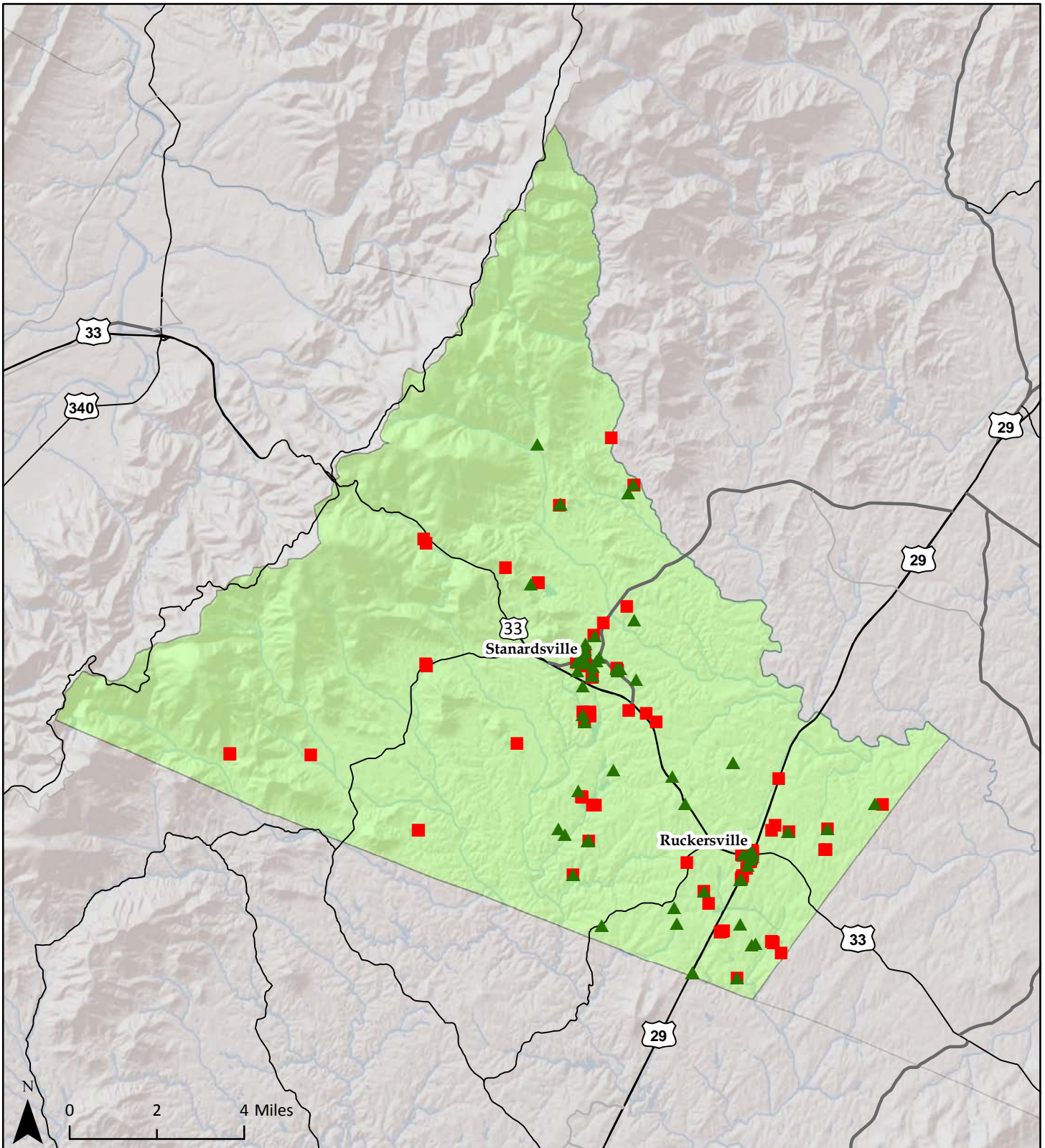
### *Surveyed Riders*

The results of the survey are described in detail in Table 3-5 offering an overview of these findings. As indicated in the survey results, nearly 60% of survey respondents were using Greene County Transit services as transportation to or from their place of employment. Additionally, a number of those surveyed (20.3%) were utilizing the bus service for shopping purposes. Customers surveyed are also regular users of Greene County Transit, with over 80% riding more than two times a week (4 times per week or more = 36.5%, 2-3 times per week = 44.6%). The survey results also indicate that Greene County Transit customers are ongoing and long-term users of the services. One in three customers who responded to the survey (33.8%) have been using Greene County Transit for over five years.

## Customer Characteristics

Over 40% of individuals who responded to the question concerning drivers' licenses were found not to have a license. In addition, 18.9% of survey respondents answered "zero" when denoting the number of available vehicles at their household, while another 33.8% of those surveyed indicated only having access to a single automobile.

Figure 3-6: Trip Log Origin and Destination Points



**Origins And Destinations**

- ▲ Trip Log Origins
- Trip Log Destinations



**Table 3-5: Greene County Transit On-Board Rider Survey Summary**

August, 2011

**Q1: In what city, town, or community do you live?**

#1:	<u>Ruckersville (22)</u>
#2:	<u>Standardsville (21)</u>
#3:	<u>Barboursville (4)</u>

**Q2: What is the purpose of your Greene County Transit trip today?**

Work:	<u>59.5%</u>
Shopping:	<u>20.3%</u>
School:	<u>10.8%</u>
Social/Recreation:	<u>16.2%</u>
Medical:	<u>13.5%</u>
Government Service Agency:	<u>1.4%</u>
Errands/Personal Business:	<u>14.9%</u>
Attend Senior Center:	<u>8.1%</u>
Attend Senior Meal Site:	<u>4.1%</u>
Other:	<u>9.5%</u>

**Q3: How often do you use Greene County Transit services?**

4 times per week or more :	<u>36.5%</u>
2-3 times per week:	<u>44.6%</u>
Once a week:	<u>6.8%</u>
2-3 time per month:	<u>8.1%</u>
Once a month:	<u>0.0%</u>
Less than once a month:	<u>4.1%</u>

**Q4: How did you find out about the Greene County Transit services?**

Already knew:	<u>63.5%</u>
Asked someone who knew:	<u>21.6%</u>
Website:	<u>2.7%</u>
Senior Center Staff:	<u>2.7%</u>
Other Agency Staff:	<u>4.1%</u>
Brochure:	<u>5.4%</u>
Asked Driver:	<u>1.4%</u>
Telephoned Greene County:	<u>1.4%</u>
Other:	<u>4.1%</u>

**Q5: How long have you been using Greene County Transit services?**

Six months or less:	<u>13.5%</u>
Between six months and one year:	<u>10.8%</u>
About one year:	<u>5.4%</u>
Between one and two years:	<u>23.0%</u>
More than two years:	<u>13.5%</u>
More than five years:	<u>33.8%</u>

**Q6: Including yourself, how many people live in your home?**

1:	<u>12.2%</u>
2:	<u>20.3%</u>
3:	<u>24.3%</u>
4 or more:	<u>37.8%</u>
No response:	<u>5.4%</u>

Table 3-5 (continued)

**Q7: How many vehicles (cars, trucks, motorcycles) are available in the household where you live?**

0:	18.9%
1:	33.8%
2:	27.0%
3:	12.2%
4 or more:	8.1%

**Q8: Was a car available today for this trip?**

Yes:	27.0%
No:	67.6%

**Q9: Do you have a driver's license?**

Yes:	41.9%
No:	58.1%

**Q10: Do you have internet access?**

Yes:	67.6%
No:	29.7%
No Response:	2.7%

**Q11: What do you like best about Greene County Transit services?**

#1:	Friendly Drivers/Courteous (26)
#2:	Convenient/Dependable (20)
#3:	Price (8)

**Q12: What do you like least about Greene County Transit services?**

#1:	Waiting/Slow Service (8)
#2:	More service to Charlottesville (5)

**Q13: Are there places in the region where you would to go, but cannot get to because there is not service available for this trip?**

No:	67.6%
Yes:	27.0%
#1:	Charlottesville (4)
#2:	Madison County (4)

**Q14: Please rate your satisfaction with Greene County Transit services in the following areas:**

	Very Satisfied:	Satisfied:	Unsatisfied:	Very Unsatisfied:	No Response:
Trip scheduling process:	66.2%	31.1%	2.7%	0.0%	0.0%
Telephone customer service:	78.4%	20.3%	0.0%	0.0%	1.4%
On-time performance:	64.9%	31.1%	2.7%	0.0%	1.4%
Days of service:	74.3%	23.0%	1.4%	0.0%	1.4%
Hours of service:	73.0%	21.6%	0.0%	1.4%	4.1%
Cost of service:	81.1%	16.2%	0.0%	0.0%	2.7%
Cleanliness of the vehicles:	83.8%	16.2%	0.0%	0.0%	0.0%
Driver Courtesy:	86.5%	12.2%	0.0%	0.0%	1.4%
Availability of information:	74.3%	23.0%	0.0%	0.0%	2.7%
Usefulness of Greene County Transit	66.2%	28.4%	0.0%	0.0%	5.4%
Safety and security:	85.1%	13.5%	0.0%	0.0%	1.4%

Table 3-5 (continued)

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**Q15: If Greene County Transit were to make service improvements what would be your top three choices?**

#1:	<u>More Weekend Service (14)</u>
#2:	<u>Longer Service Hours (9)</u>
#3:	<u>More Service to Charlottesville (7)</u>

**Q16: Please provide any comments you may have concerning public transportation in Greene County or in the region?**

Give approximate time of arrival  
 Overall, very good service  
 We need our transit 8 days a week. I really depend on them.  
 No complaints, late pick ups, Mr Raines is pleasant and well mannered. He shows concern.  
 Overall the service is really good  
 Wish they could travel to certain parts of Orange then I could ride all the time. Otherwise, service is great; glad transit is available.  
 Overall, very good service  
 We need our transit 8 days a week. I really depend on them.  
 No complaints, late pick ups, Mr Raines is pleasant and well mannered. He shows concern.  
 Overall the service is really good  
 Service is great, but wish they could travel to my home in Barboursville so I could ride all the time  
 Thanks for helping me out.  
 Office staff are friendly and courteous, I like riding transit when no other transport is available.  
 Best thing to ever happen to Greene County  
 It is a joy to have this service. Good for budget - Thank you!  
 Nice  
 The best thing to happen  
 The best thing Greene have for people that can't drive.  
 Having to call in a day ahead  
 Most drivers have me on time but one the regular driver if we travel Turkey Ridge I am 5 to 7 minutes late to work. I have to be on time that could be counted against me.  
 I think this is a great thing that Greene County is doing. Keep up the good work.  
 I've only been using it since my car died, but have really appreciated it. I do wish it would run when most roads are clear but schools are still closed due to snow-even if only limited runs. It's rare to see actual service in a service industry  
 Great service!  
 No concerns! Excellent!  
 I couldn't get around to do anything without transit. Best thing to happen, we would be at a great loss without it, I tell you that.  
 They are good people.  
 Great service!  
 All I ask is to get to school on time at 9 and not late when its different drivers but when Stanley drives I get to school early at 8:30 which is wonderful. Better early than late, that's what I say.  
 Great!

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## **Rider Satisfaction**

Greene County Transit customers were asked to rate the services in a variety of areas. The rate of satisfaction was overwhelmingly positive. Specific areas that were rated highest included courtesy, cleanliness of the vehicles, and the cost of service. This satisfaction was reinforced when customers were asked what they liked best about Greene County Transit, with the top answer being the friendly and courteous drivers.

## **Title VI and Federal Transit Administration (FTA) Triennial Review**

While Greene County Transit is required to follow all applicable FTA guidance with regard to regulatory compliance, as a subrecipient of federal funds through the DRPT, Greene County Transit is not required to directly report compliance activities to the FTA. DRPT is charged with ensuring that its subrecipients are in compliance with federal guidance and prepares statewide reports on behalf of its rural transit providers and submits these reports to the FTA.

## **TRANSIT NEEDS ANALYSIS**

This section provides an assessment of community transit needs based on demographic analysis, land use patterns, stakeholder input, and major transit origins and destinations. This needs assessment incorporates information gathered from recent planning efforts and data from the U.S. Census, as well as input received through the on-board customer survey. Interviews with local stakeholders are ongoing, and results from these interviews will be added to this chapter at a later date.

This evaluation included the identification of transit-dependent populations to determine areas that have higher relative demand for transit service. With this information, the needs analysis considers whether the current transit services are meeting the needs of the community. The results, along with the public input obtained through surveys and meetings with key stakeholders, were used to develop recommendations for enhancement of transit services in Greene County.

## **REVIEW OF RECENT PLANS**

### ***Greene County Comprehensive Plan***

The latest version of the Greene County Comprehensive Plan was adopted by the Greene County Planning Commission on April 21, 2010. The plan's overarching vision is to enhance quality of life enjoyed by preserving the County's rural character and natural beauty and by guiding growth and development. One of the plan's key components in achieving this vision is planning for various modes of travel. Greene

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County Transit will play an important role in providing public transportation services and improving quality of life for transit-dependent populations.

The plan anticipates future development will be clustered around Stanardsville and the Route 29 corridor, between Ruckersville and the Albemarle County line. As presented later in this report, this same area is found to contain the highest relative concentrations of transit-dependent persons. Given this, Greene County Transit may need to consider opportunities for fixed-route service along the US 29 and US 33 corridors in the future.

Recent figures on commuting patterns for Greene County residents show that over 36% are employed in Albemarle County and about 14% are employed within the city of Charlottesville. Given these statistics, opportunities may exist for a daily commuter service to key employment destinations in Charlottesville. Currently, the demand-responsive system to Charlottesville provides door-to-door service; however, a fixed-route express service from a centralized location in Greene County (i.e. a park-and-ride lot) to a central location in Charlottesville may provide a more efficient option for commuting residents. Locations for park-and-ride lots are presented in the following section. The comprehensive plan also suggests that proposed mixed use villages and town centers along the US 29 and US 33 corridors may provide opportunities for local fixed-route transit service between these destinations.

### ***Multimodal Corridor Study for US 29 and US 33***

The Multimodal Corridor Study for US 29 and US 33 was completed in 2009 by Renaissance Planning Group and offers several recommendations for transit service within Greene County. First, based on land use growth patterns and public input, the plan forecasts that future development along US 29, US 33, and Route 230 could create additional demand for transit service along these corridors that may support fixed-route service. Combined land use and transportation strategies could foster the effectiveness of future transit service in this area.

Second, stakeholder meetings led to proposals for park-and-ride lots that could encourage car pooling, provide new locations for transit stops, and provide the foundation for future regional transit services. These proposed lots are located along US 29 and US 33 near Stanardsville and Ruckersville.

Third, the preferred land use scenario supports compact town centers with densities and development patterns that may begin to support fixed-route transit service in the future. To ensure seamless integration of public transportation into land use strategies, Greene County Transit should be included as a stakeholder in future land use plans.

### ***Thomas Jefferson Planning District Commission Coordinated Human Service Mobility (CHSM) Plan***

The CHSM Plan for the region was released in June 2008 and covers a multi-county area including Albemarle, Fluvanna, Greene, Louisa, and Nelson Counties. It includes an assessment of transportation needs for individuals with disabilities, older adults, and people with low incomes as well as strategies to address the identified gaps between current services and opportunities for improved service efficiency. An assessment of unmet transportation needs include weekend transportation service in rural areas, additional vanpooling options, and transportation services that do not require advance notice.

The CHSM Plan also identifies corresponding strategies to address service gaps. In total, 13 strategies were identified and endorsed by key stakeholders. These strategies are:

- Continue to support capital needs of coordinated human service/public transportation providers.
- Expand availability of demand-response service and specialized transportation services for people who need mobility options.
- Implement new public transportation services or operate existing public transit services on a more frequent basis.
- Build coordination among existing public transportation and human service transportation providers.
- Provide targeted shuttle services to access employment opportunities.
- Expand access to taxi and other private transportation operators.
- Establish a ride-sharing program for long-distance medical transportation.
- Expand outreach and information on available transportation options and coordination opportunities.
- Provide flexible transportation options and more specialized transportation services or one-to-one services through expanded use of volunteers.

- Establish or expand programs that train customers, human service agency staff, medical facility personnel, and others in the use and availability of transportation services.
- Bring new funding partners to public transit/human service transportation.
- Work with appropriate policy makers to reduce barriers to providing transportation services.
- Improve accessibility and customer amenities to encourage use of available public transportation options.

The CHSM elaborates upon each of these strategies by analyzing how they will address unmet needs and issues. Additionally, it initiates an implementation plan by identifying potential projects and funding sources for each project.

The 2008 CHSM Plan is currently being updated by regional stakeholders. The updated plan will be completed by June, 2012.

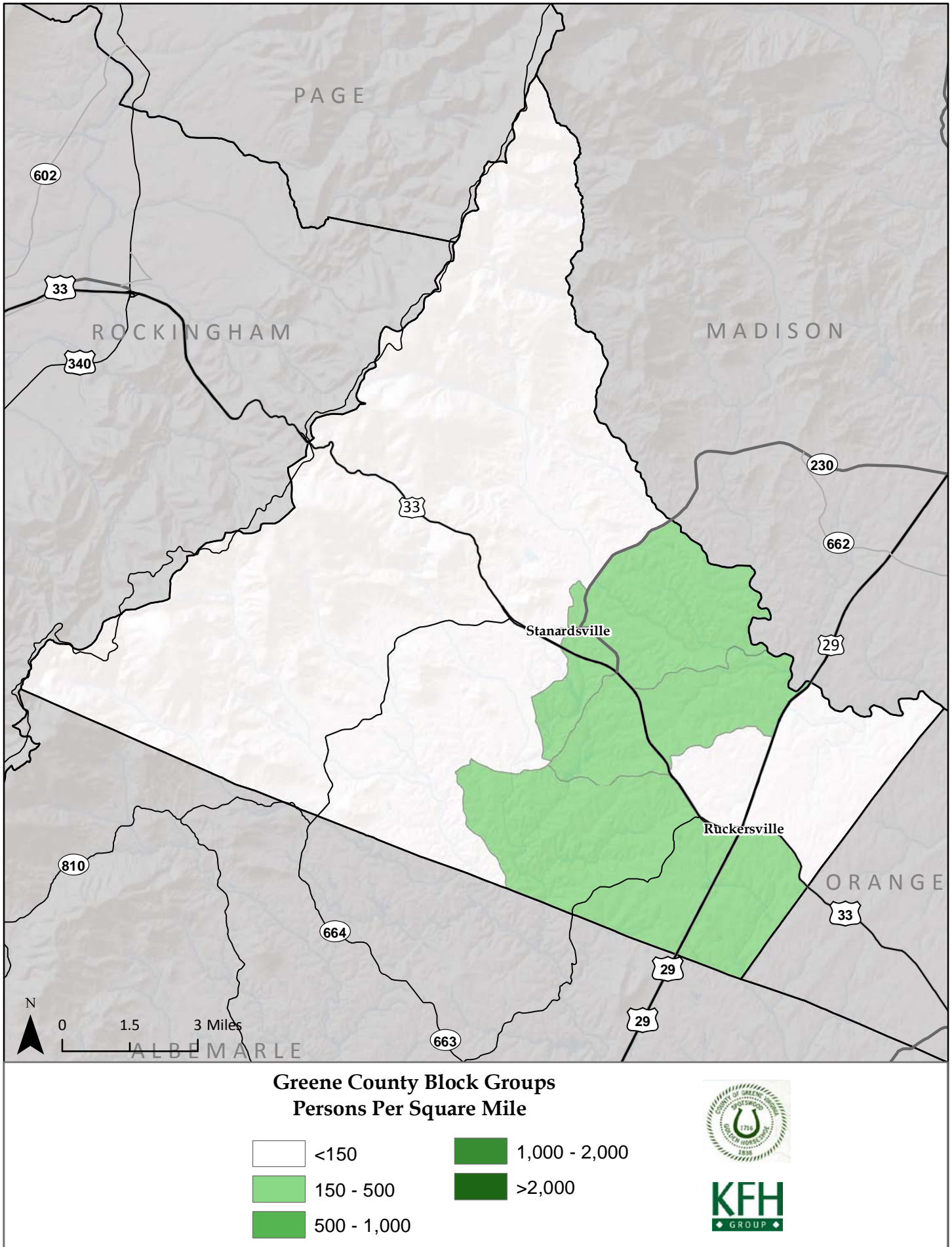
## DEMOGRAPHIC ANALYSIS

The demographic analysis of transit needs conducted by the study team focused on quantitative data associated with potentially transit dependent populations, such as older adults, individuals with disabilities, and persons living below the poverty level. U.S. Census data on these populations were collected, processed, and mapped using Geographic Information Systems (GIS) technology to help identify areas with relatively high potential transit needs. Major origins and destinations for potential transit riders were also researched and mapped, in order to augment the study team's understanding of areas with higher transit needs.

### Population Density

Figure 3-7 shows Greene County's population density based on 2010 Census data. The county's general population density was mapped by block group to determine appropriate levels of transit service, such as fixed-route or demand-response. While there may always be exceptions, an area with a density of over 2,000 persons per square mile should generally be dense enough to support regular, fixed-route transit services. Greene County is generally a rural county and no area of the county has a population density of greater than 500 persons per square mile.

Figure 3-7: Population Density



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## Overview of Transit Dependent Population

### *Transit Dependence Index (TDI)*

One component of analyzing transit needs within Greene County is to examine segments of the population that may have higher relative need and demand for public transportation services. These population segments include those who do not have access to a personal vehicle or who are unable to drive themselves due to age or disability. Identifying the locations of these transit-dependent populations, along with the key destinations to which they travel, is a critical component of assessing the effectiveness of existing transit services and recommending improvements.

The TDI is an aggregate measure that helps determine relative concentrations of potentially transit-dependent populations within Greene County. The TDI utilizes data from the 2005-2009 American Community Survey (ACS) five-year estimates and the 2010 Census. Using GIS mapping software, the TDI is mapped to display the locations of populations with relatively high transit needs at the block group level.

The TDI incorporates five socioeconomic categories that contain potentially transit-dependent persons to determine relative levels of transit needs in Greene County. These socioeconomic categories include:

1. **No Vehicle Households (NV)** – The number of households without an automobile. The lack of an available automobile is one of the most significant factors in determining transit needs.
2. **Elderly Population (E)** – The number of persons age 65 and over. This group may include those who choose not to drive, have previously relied on a spouse for mobility, or face other factors associated with age that prohibit them from driving.
3. **Youth Population (Y)** – The number of persons age 10 to 17 years. This group includes a significant number of those who are old enough to travel on their own, but are often not old enough to drive themselves or do not have a car available.
4. **Persons with Disabilities Population<sup>1</sup> (D)** – The number of persons age 16 and over who have a disability lasting six or more months, which makes it

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<sup>1</sup>Data on persons with disabilities is not collected from the 2005 – 2009 ACS because of an alteration to the question in the ACS that resulted in a disruption in reporting consistency. Therefore, 2010 United States Census data is used to calculate ten-year, percent change population shifts per block group, with this total population percent change being factored to the 2000 Census data for persons with disabilities to determine current estimates of persons with disabilities.

difficult for them to go outside the home. Often, transit service is their only option to reach critical destinations.

5. **Below-Poverty Population (BP)** – The number of persons who have lived below the poverty level in the past 12 months. This group may not have the economic means to purchase or maintain a personal automobile.

The TDI also includes a population density factor. A complete explanation of the methodology used to develop the TDI is provided in Appendix B. The TDI shows relative need within a study area, which means that in a relatively homogenous service area, there will not be locations that show up as high need, as the index reflects the degree to which a certain area is below or above the study area average for the various needs characteristics.

According to Figure 3-8, which displays the TDI for Greene County, the area with the greatest level of transit need is located in the southern portion of the county, west of US 29. If development along the US 29 corridor continues in the future, this area may warrant fixed-route service, given its higher population density and concentration of trip generators relative to other areas of Greene County.

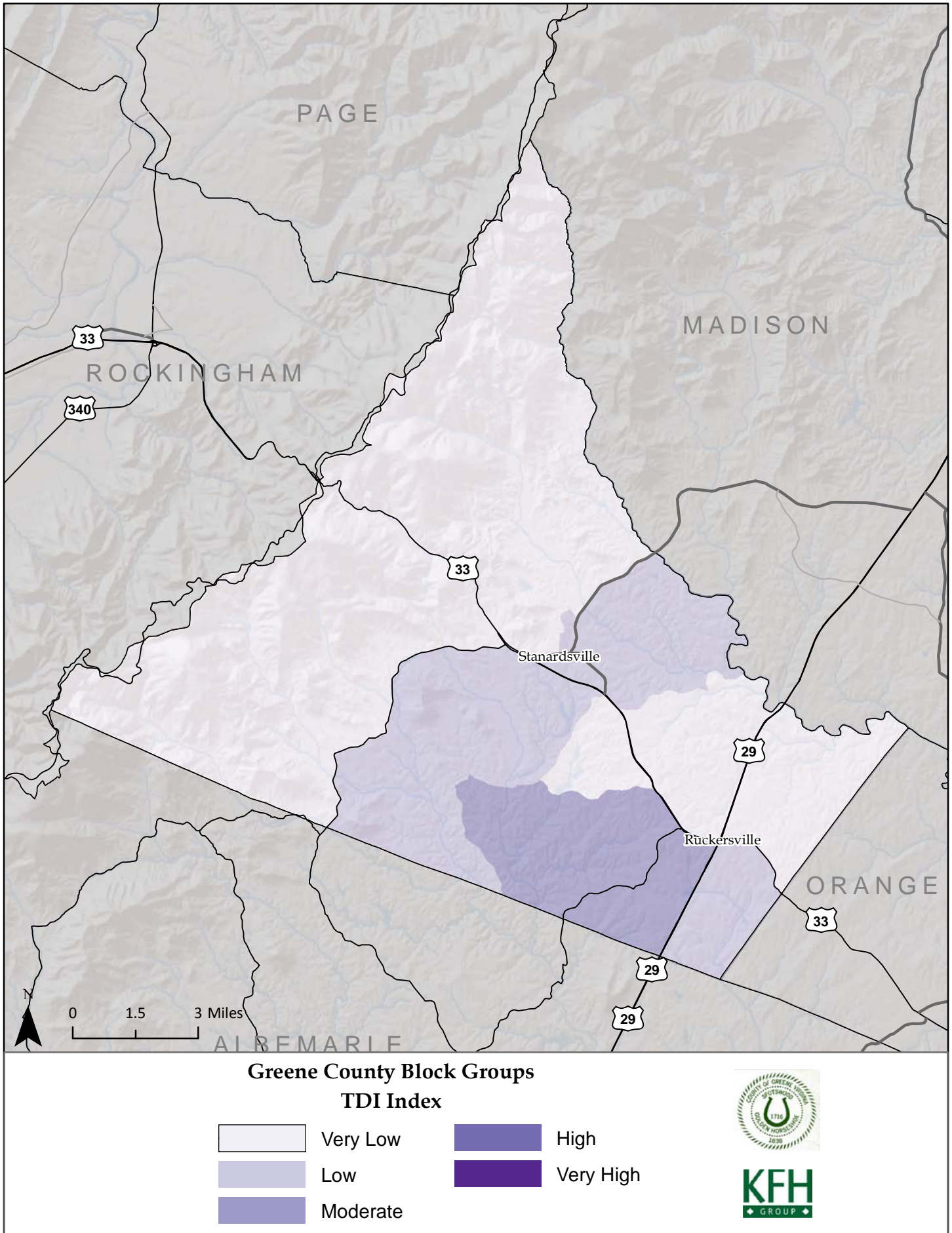
### *Autoless Households*

Households without access to at least one personal vehicle are more likely to depend on public transportation than those households with access to an automobile. Figure 3-9 is a map of the autoless household classification of each block group in Greene County. The values for the autoless household score follow the previously mentioned classification scheme, which scores each block group from one to five, one being a very low score and five being a very high score. The southernmost block group of the County has a very high relative classification, as it contains over 55 autoless households. The northernmost block group of Greene County has the next highest relative classification (high), followed by the block group that is bordered on the east by 29 and extends into the middle of the county (moderate). The remaining block groups in Greene County were classified as having very low relative need, as they contain between zero and 13 autoless households.

### *Older Adults*

As older adults age 60 and up may no longer be able to drive or may choose to no longer drive, public transportation becomes an essential element in maintaining their quality of life and avoiding relocation to assisted living facilities or a nursing home. Figure 3-10 portrays Greene County's block groups by older adult population classification. Two block groups, the block group bordered by the county boundary line on the south, Route 29 on the east, and Route 33 on the north as well as the block group

**Figure 3-8: Transit Dependence Index Classification**



**Figure 3-9: Autoless Household Classification**

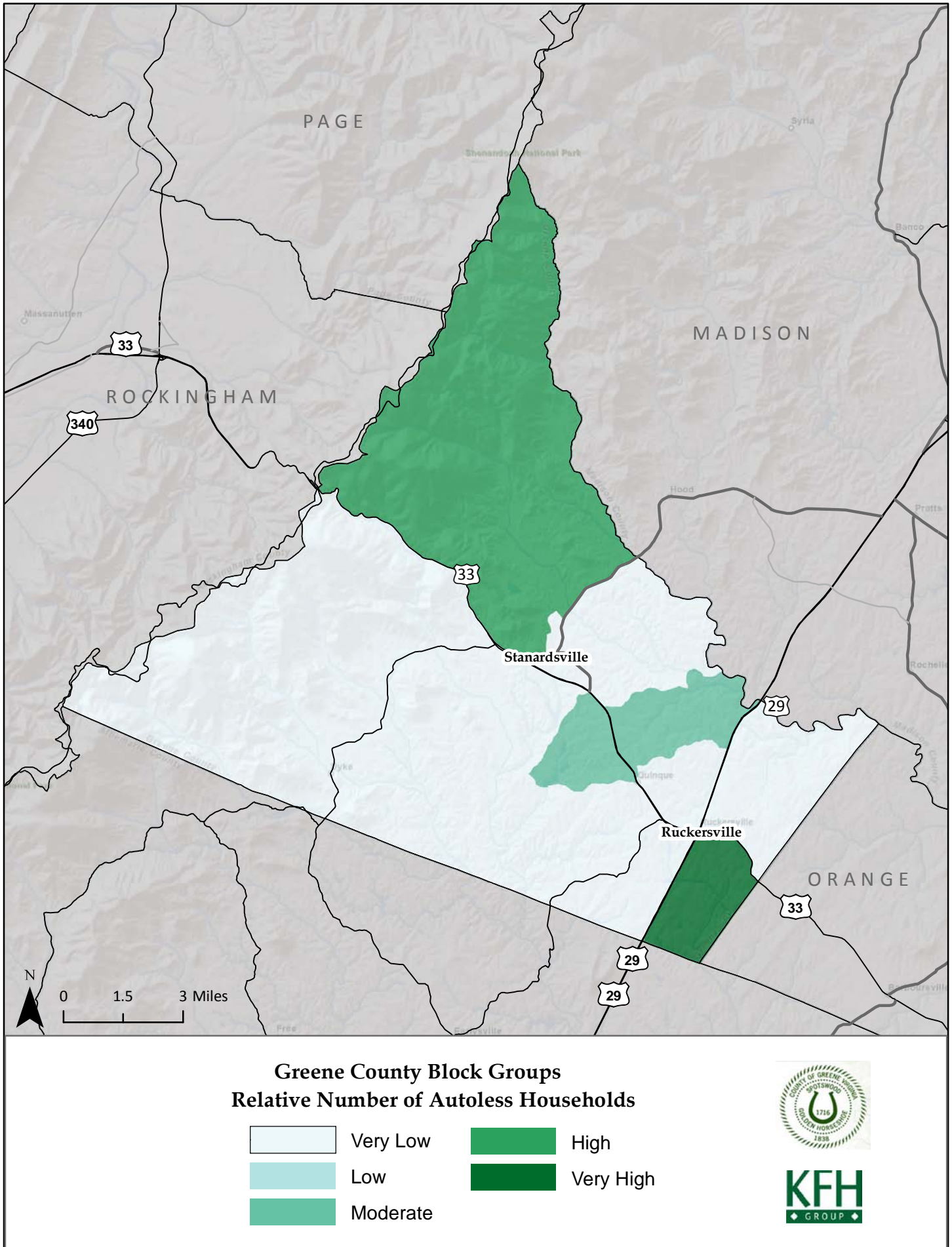
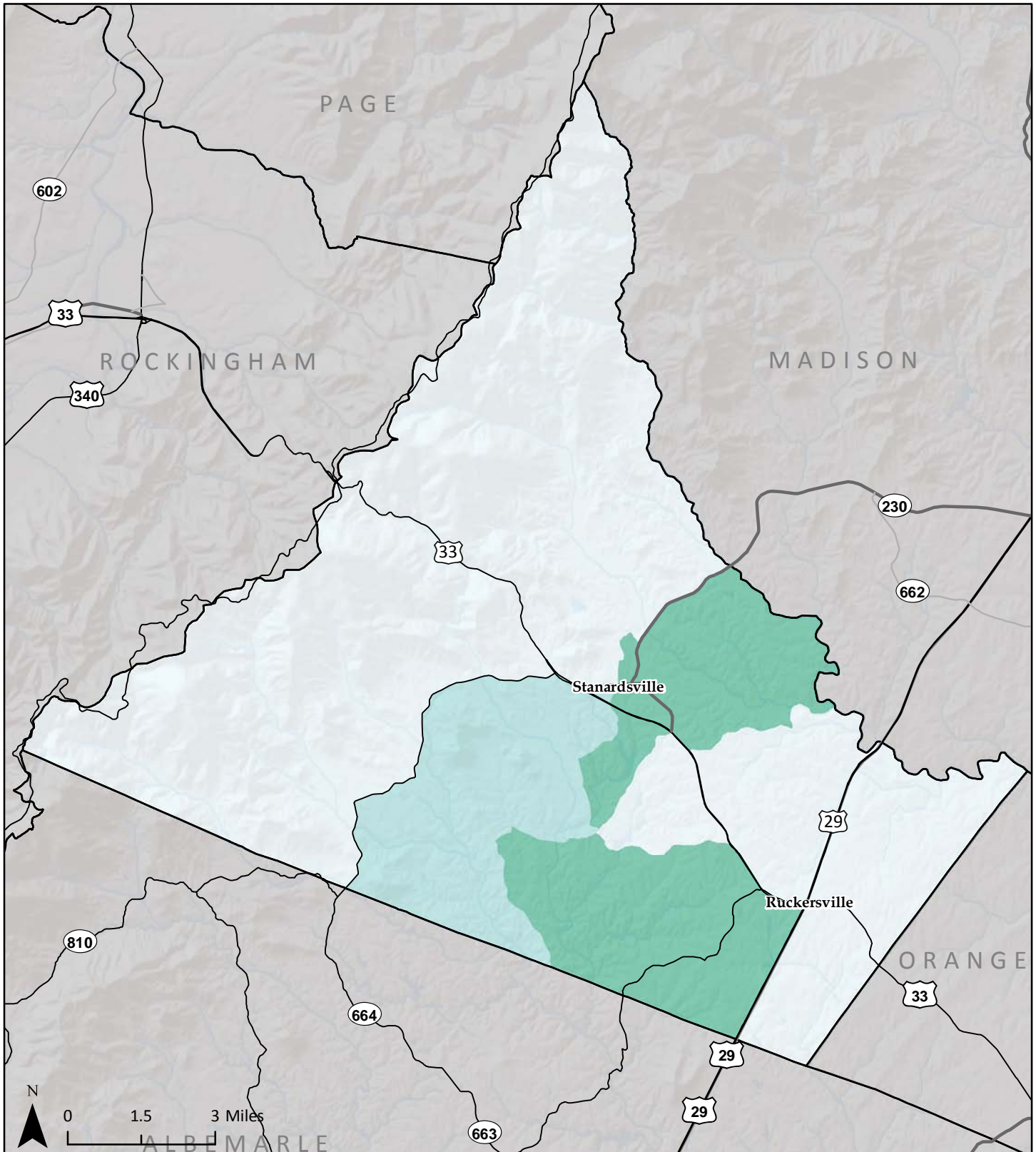


Figure 3-10: Older Adults Classification



**Greene County Block Groups  
Relative Number of Elderly Persons**



that contains Stanardsville, have moderate relative classifications, as they contain 35 and 40 older adults, respectively. Another block group located along the southern boundary of the county received a classification of low, while the remainder of the block groups were classified as having very low relative need based on their number of older adults.

### ***Youth***

Figure 3-11 shows Greene County's block group by the relative classification of persons age ten to 17. The block group bordered on the east by Route 29 and on the south by the county's boundary has a high relative number of youth, as it contains 50 persons between the ages ten and 17. There are three block groups that received a classification of low, while the remaining block groups were classified as having very low relative need.

### ***Persons with Disabilities***

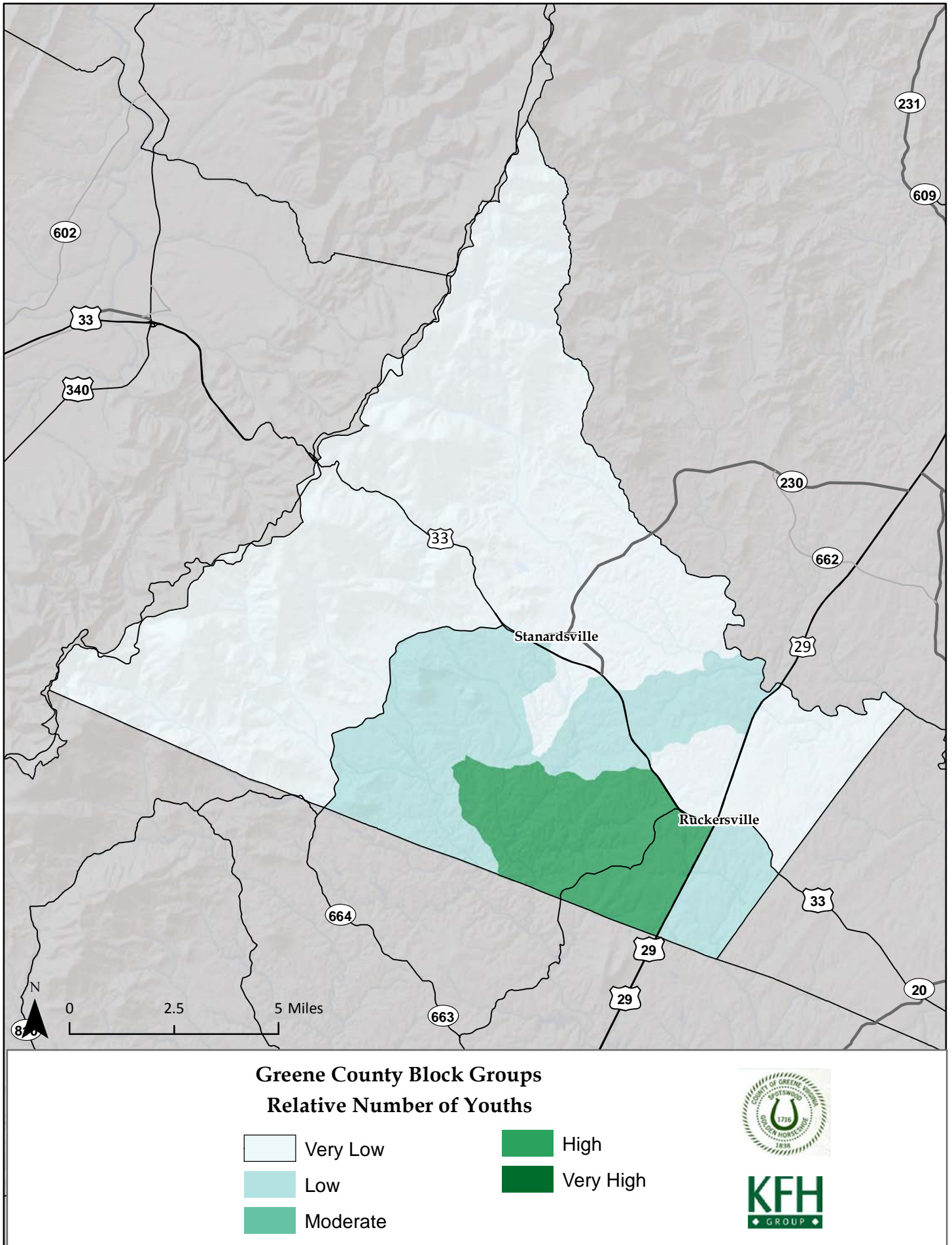
Figure 3-12 portrays Greene County's block groups by relative need based on the presence of persons with disabilities. Persons with disabilities are considered a potential indicator of the need for transit services due to these individuals' need for accessible transportation for various trip purposes, from employment and medical treatment to shopping and social activities. Two block groups were classified as having moderate need based on the number of persons with disabilities they contain. Both of these block groups are intersected by Route 33 and one is bordered on the south by the county boundary line while the other is bordered on the north by the county boundary line. Two block groups received a relative classification of low and the remaining four block groups were classified as having very low transit need.

### ***Low-Income Population***

Persons living below the poverty level may not have the economic means to either purchase or maintain a personal vehicle and thus are more likely to be dependent upon public transportation for both mandatory and discretionary trips. Figure 3-13 is a map showing the relative transit need of Greene County's block groups based on the presence of persons living below the federal poverty level in each block group. The block group bordered by the county boundary line on the south, Route 29 on the east, and Route 33 on the north received a classification of very high, as it contains 347 persons living below the poverty level. Three block groups received classifications of moderate, as they contained between 230 and 270 persons living below the poverty level.

The remaining four block groups were classified as having very low need.

**Figure 3-11: Youth Classification**



**Figure 3-12: Persons With Disabilities Classification**

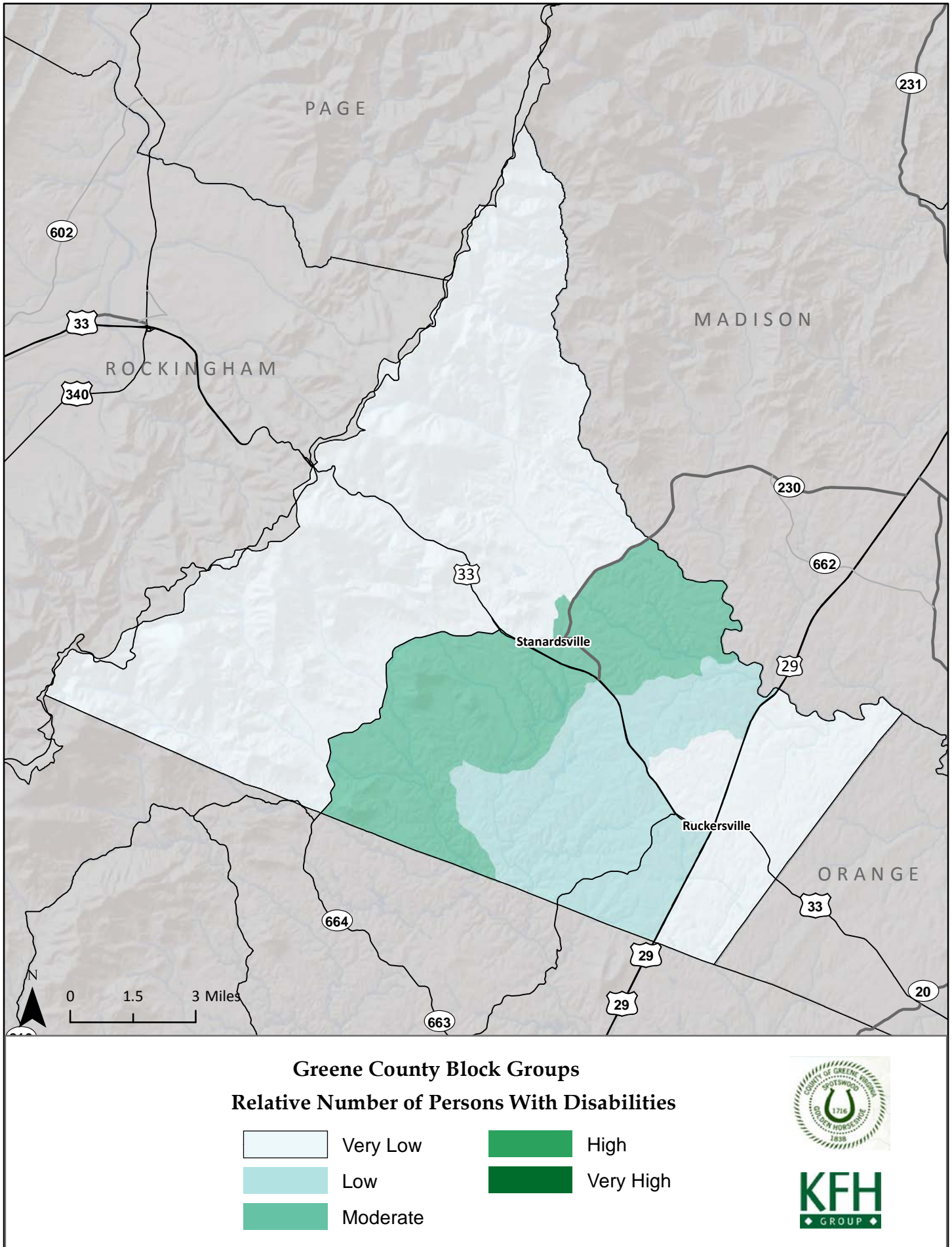
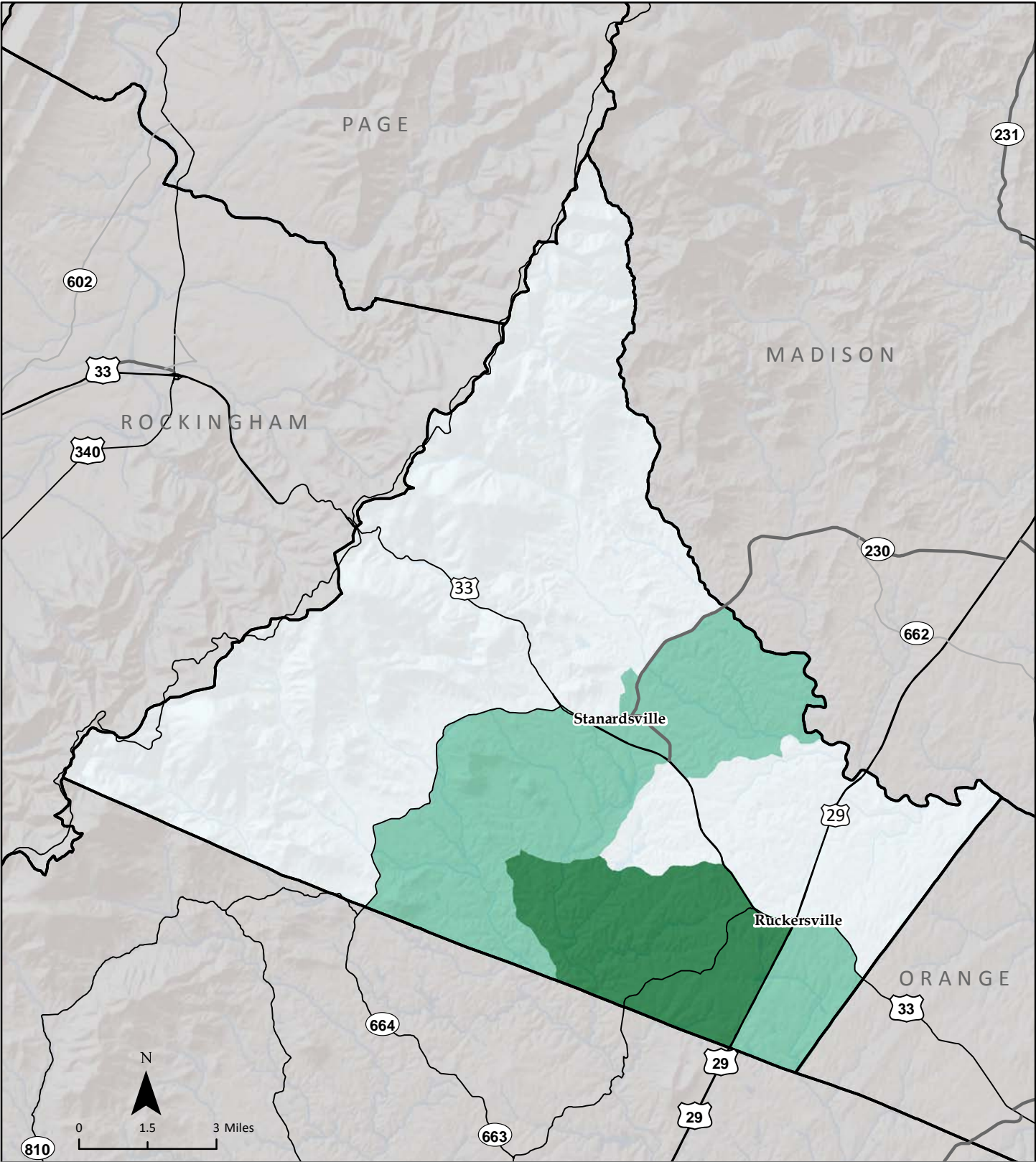


Figure 3-13: Persons Living Below the Federal Poverty Level Classification



**Greene County Block Groups**  
**Relative Number of Persons Living Below the Poverty Level**



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### ***Environmental Justice Index (EJI)***

The EJI is an aggregate measure that may be employed with mapping software to effectively display relative concentrations of racial and/or ethnic minorities and low-income residents throughout the study area. The structure for the EJI was introduced in a 2004 National Cooperative Highway Research Program report in order to offer “practitioners an analytical framework to facilitate comprehensive assessments of a proposed transportation project’s impacts on affected populations and communities.”<sup>2</sup> The application of the EJI within this needs assessment will ensure a high standard of social and economic equality, as outlined in Title VI of the Civil Rights Act of 1964, when evaluating potential modifications to the present public transportation services in the region.

Similar to both the TDI and TDIP, the data utilized for the EJI was compiled by the ACS’s five-year estimates, which enabled examination of socioeconomic characteristics at a block group level of analysis, and the United States Decennial Census, which provided the necessary geographic information (e.g., block group boundaries). Factors included in the EJI are:

- population per square mile
- minority population
- below-poverty population

A full discussion of the EJI methodology is provided in Appendix C.

Figure 3-14 displays the EJI index for Greene County. The results of the EJI closely mirrored that of the TDI. Again, the area immediately west of the US 29 corridor in the southern portion of the county represented the area with the highest EJI.

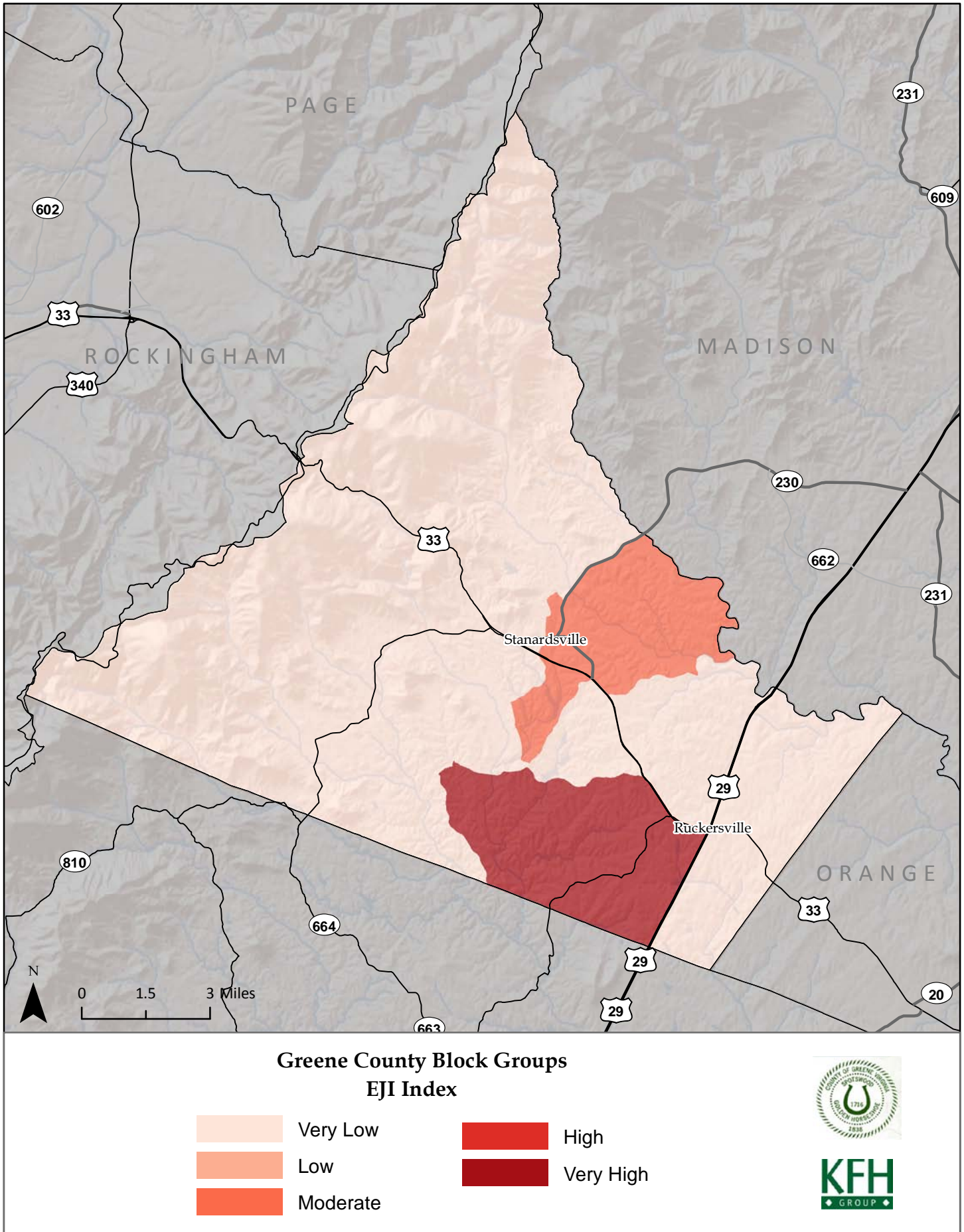
### **Limited-English Proficiency**

In addition to equitably providing transportation to individuals of diverse socioeconomic backgrounds, it is important to realize the variety of languages spoken by residents of Greene County. Greene County Transit must determine how and to what level to disseminate information to individuals and households with limited English-speaking proficiency in its service area. According to ACS’s five-year estimates

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<sup>2</sup> Forkenbrock, D. and Sheeley, J. 2004. *Effective Methods for Environmental Justice Assessment*. NCHRP Report 532. Transportation Research Board, National Research Council. Washington, DC: National Academy Press.

Figure 3-14: Environmental Justice Index Classification



for 2005-2009, English is, unsurprisingly, the predominantly spoken language amongst the residents of the Greene County (95.76%). Of the other languages spoken by Greene County residents, only Spanish or Spanish Creole has a percent-share greater than one percent (2.82%). Of those households where a non-English language is spoken, the split between those who are able to speak English “very well” and those with ability that is less than the threshold is about even. Among all of the residents in Greene County that speak a language other than English at home (4.24%), 50.78% are unable to speak English “very well.” These numbers show that the overwhelming majority of residents in the study area are either native English speakers or at ease with speaking the language.

Examining the linguistic isolation in Greene County provides a similar finding, which is detailed in Table 3-6. Only 1.63% of the households in Greene County are considered linguistically isolated by the ACS’s findings, the majority of which speak Spanish in the household.

## MAJOR TRIP GENERATORS

Major trip generators are those origins from which a concentrated transit demand is typically generated and those destinations to which both transit-dependent persons and choice riders are attracted. They include high density housing locations such as apartments and assisted living facilities, major employers, medical facilities, educational facilities, shopping malls and plazas, grocery stores, and human service agencies. The data on major trip generators was collected from county and state websites such as Greene County, the Virginia Department of Social Service, and Virginia Employment Commission. A list of identified trip generators is located in Table 3-7.

Figure 3-15 shows the locations of the major trip generators throughout Greene County. The purpose of this map is to highlight areas of the county that have concentrations of major trip generators, and therefore are good candidates for expanded or new transit services. The majority of the major origins and destinations are clustered around Stanardsville, along US 33 between Stanardsville and Ruckersville, and along US 29 south of Ruckersville.

### Service Improvements Proposed by Riders

Through the on-board rider survey, customers were asked if Greene County Transit were to make service improvements, what would be their top three choices. The top three themes were:

**Table 3-6: Limited-English Proficiency and Linguistic Isolation in Greene County**

<b>County of Residence:</b>	<b>Greene County</b>	
<b>Population Five Years and Older:</b>	<b>16,674</b>	
Language Spoken at Home--	#	%
English (only):	15,967	95.76%
Spanish or Spanish Creole:	471	2.82%
German:	91	0.55%
Tagalog:	29	0.17%
Persian:	21	0.13%
Italian	18	0.11%
Other:	77	46.00%
Speak non-English at Home:	707	4.24%
Ability to Speak English--		
"Very Well":	348	49.22%
Less than "Very Well":	359	50.78%
<b>Number of Households:</b>	<b>6,741</b>	
Language Spoken in Household--	#	%
English (only):	6,384	94.70%
Spanish:	190	2.82%
Other Indo-European:	121	1.79%
Asian and Pacific:	46	0.68%
Other Languages:	0	0.00%
Linguistically Isolated:	110	1.63%
Language Spoken in Household:		
Spanish:	101	91.82%
Other Indo-European:	9	8.18%
Asian and Pacific:	0	0.00%
Other Languages:	0	0.00%

Source: American Community Survey, Five-Year Estimates (2005-2009), Table B16001 and Table B16002

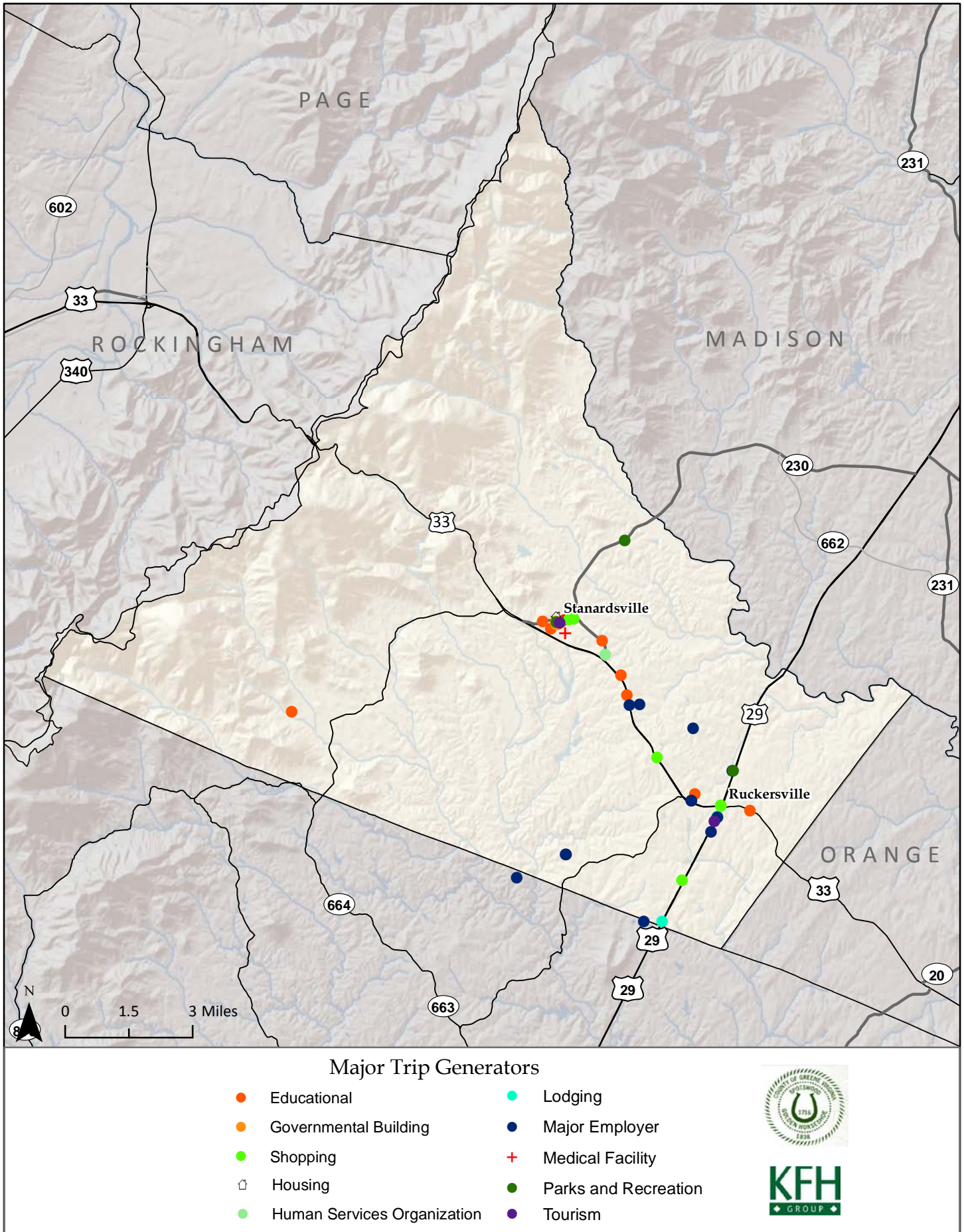
**Table 3-7: Trip Generators in Greene County, Virginia**

Type	Name	Address	City	State	Zip
Child Care	Greene County Childcare Center	204 New Life Drive	Ruckersville	VA	22968
Child Care	Haney-Ripley	9661 B Spotswood Trail	Stanardsville	VA	22973
Child Care	Skyline Head Start	8094 Spotswood Trail	Stanardsville	VA	22973
Child Care	Great Beginnings Preschool/Daycare	15528 Spotswood Trail	Ruckersville	VA	22968
Educational	Greene County Technical Education Center	10415 Spotswood Trail	Stanardsville	VA	22973
Educational	Greene County Library	222 Main St	Stanardsville	VA	22973
Educational	Blue Ridge School	273 Mayo Drive	Saint George	VA	22935
Educational	United Christian Academy	225 Crusader Ct	Stanardsville	VA	22973
Educational	UVA - Charlottesville	1215 Lee Street	Charlottesville	VA	22908
Educational	Piedmont Community College	501 College Drive	Charlottesville	VA	22902
Educational	William Monroe High School	254 Monroe Dr	Stanardsville	VA	22973
Governmental Building	Greene County Clerks Office	22 Court Street	Stanardsville	VA	22973
Governmental Building	Greene County Commonwealth Attorney	38 Standard Street	Stanardsville	VA	22973
Governmental Building	Greene County Health Department	50 Stanard Street	Stanardsville	VA	22973
Governmental Building	Greene County District Courts	85 Stanard Street	Stanardsville	VA	22973
Governmental Building	Standardsville Town Office	19 Celt Road	Stanardsville	VA	22973
Governmental Building	Greene County School Board Office	40 Celt Road	Stanardsville	VA	22973
Governmental Building	US Post Office	47 Celt Road	Stanardsville	VA	22973
Grocery	Food Lion	136 Cedar Grove Rd	Ruckersville	VA	22968
Grocery	Pic N Pac	12805 Spotswood Trail	Ruckersville	VA	22968
Grocery	Ruckersville Express Mart	8623 Seminole Trail	Ruckersville	VA	22968
Grocery	Greene Great Value	8721 Spotswood Trail	Stanardsville	VA	22973
Grocery	Walmart	135 Stoneridge Drive	Ruckersville	VA	22968
Health Care	Evergreen Nursing Center	355 William Mills Drive	Stanardsville	VA	22973
Health Care	Greene Counseling Center	24 Rectory Lane	Stanardsville	VA	22973
Housing	Greene Village Apartments	40 Village Road	Stanardsville	VA	22973
Human Services Organization	JABA Adult Care Center - Charlottesville	674 Hillsdale Dr	Charlottesville	VA	22901
Human Services Organization	Greene County Department of Social Services	10009 Spotswood Trail	Stanardsville	VA	22973
Lodging	Best Western Charlottesville Airport Inn	5920 Seminole Trail	Ruckersville	VA	22968
Lodging	Trail Motel	8633 Seminole Trail	Ruckersville	VA	22968
Major Employer	Phillips Communications and Equipment	31 Commerce Drive	Ruckersville	VA	22968
Major Employer	Mountain Lumber Company	6812 Spring Hill Road	Ruckersville	VA	22968

**Table 3-7: Trip Generators in Greene County, Virginia**

Type	Name	Address	City	State	Zip
Major Employer	Luck Stone Corporation	221 Luck Stone Road	Ruckersville	VA	22968
Major Employer	Insurance Institute of Highway Safety	988 Dairy Road	Ruckersville	VA	22968
Major Employer	Virginia Linen Service	174 Industrial Drive	Ruckersville	VA	22968
Major Employer	Techni-pak	623 Welsh Run Road	Ruckersville	VA	22968
Major Employer	Eades Building Systems	1143 Durrett Ridge Rd	Earlysville	VA	22936
Major Employer	Document Destruction of Virginia	18 C New Life Drive	Ruckersville	VA	22968
Major Employer	A Goff Transportation	18 New Life Drive	Ruckersville	VA	22968
Major Employer	Video Gaming Technologies	623 Welsh Run Road	Ruckersville	VA	22968
Major Employer	Rapidan Service Authority	11235 Spotswood Trail	Stanardsville	VA	22973
Major Employer	Culligan Water Conditioning	8726 Seminole Trail	Ruckersville	VA	22968
Medical Facility	JABA Greene County Community Center	222 Main St	Stanardsville	VA	22973
Parks and Recreation	Greene County Community Center	40 Celt Road	Stanardsville	VA	22973
Parks and Recreation	Greene Hills Club	3858 Dundee Road	Stanardsville	VA	22973
Parks and Recreation	Highlands Golf Park and Mini Golf	10421 Seminole Trail	Ruckersville	VA	22968
Pharmacy	Walmart Pharmacy	135 Stoneridge Drive	Ruckersville	VA	22968
Pharmacy	Greene Pharmacy	331 Main Street	Stanardsville	VA	22973
Tourism	Greene County Historical Museum	38 Court Street	Stanardsville	VA	22973
Tourism	Monticello (Charlottesville)	931 Thomas Jefferson Parkway	Charlottesville	VA	22902
Tourism	Antiquer's Mall	8287 Seminole Trail	Ruckersville	VA	22968

Figure 3-15: Major Trip Generators



- More weekend service,
- Longer service hours,
- More service to Charlottesville.

Another survey question asked respondents if there were places in the region where they would like to go, but cannot get to because there is not transit service available. Only 27% responded that there are locations they cannot access, with Charlottesville and Madison County as the top two responses.

## **ADDITIONAL STAKEHOLDER INPUT**

In addition to input from the members of the TDP Advisory Committee, outreach was conducted to gain input on transportation needs from other community stakeholders. In particular, the Director of Greene County Social Services identified the following as mobility needs in regard to Greene County Transit services that impact the people their agency serves:

- Expanded hours for Saturday services,
- Service on Sundays,
- Service to Orange from Greene County that provides transportation to a dental clinic that serves low-income individuals,
- More efficient process for obtaining billing and other information on the customers their agency supports.

## **CURRENT OR PLANNED ITS PROJECTS AND PROGRAMS**

There are no plans for ITS projects and programs. However, one of the alternatives included in Chapter 4 details the potential for technology improvements to Greene County Transit's current scheduling process.



## Section 4

# Service and Organizational Alternatives

### INTRODUCTION

This fourth chapter prepared for the Greene County Transit TDP provides a range of service and organizational alternatives for Greene County Transit to consider when planning transit services for the six-year horizon covered by the TDP. These alternatives were developed based on the data and information compiled and analyzed in Chapters 1-3. The service alternatives are presented first, followed by the organizational alternatives. These alternatives also include additional opportunities for Greene County Transit to consider.

### SERVICE ALTERNATIVES

The previous chapter provided an evaluation of current services, as well as an analysis of transit needs based on quantitative data and on input from Greene County Transit customers. Through the service review, needs assessment, and outreach, there are specific service improvements that should be considered for implementation. These alternatives include opportunities to:

- Expand services;
- Increase awareness of services;
- Obtain input on services;
- Provide more efficient services;
- Coordinate services.

Each service alternative is detailed in this section and includes:

- A summary of the service alternative,
- Potential advantages and disadvantages,

- Ridership estimates,
- An estimate of the operating and capital costs.

It should be noted that these alternatives were discussed with Greene County Transit, the TDP Advisory Committee, and DRPT, and modified based on their input.

### **Service Alternative #1: Expanded Weekend Service**

Currently, Greene County Transit provides demand-response services in the County on Saturdays from 9:00 a.m. to 4:00 p.m. No services are provided on Sunday. When asked what service expansions should be the highest priority through the on-board survey, the number one answer provided by customers was for more weekend service. This may reflect that many customers use Greene County Transit services for trips to work, and therefore need to access employment locations that require weekend hours. In addition, during the initial Advisory Committee meeting it was noted that for many customers Greene County Transit is their lifeline to the community, and obviously this need exists seven days a week.

This alternative proposes that Greene County Transit implement later service on Saturday and some level of service on Sundays. Adding this expansion of current services would result in additional service hours per year, and would be impacted by the number of vehicles that would be needed to handle trips scheduled during these times and any expanded dispatch coverage.

#### ***Advantages***

- Offers expanded mobility for customers on weekends.
- Responds to top need expressed by customers through the on-board rider survey.
- Utilizes current vehicles.

#### ***Disadvantages***

- Requires additional operating costs for expanded service.
- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.

#### ***Expenses and Funding Sources***

- To expand Saturday service two hours so that it operates from 9:00 a.m. to 6:00 p.m., and using current cost per hour data the estimated annual

operating costs for expanding Saturday services would be \$4,496 for each vehicle operated.

- To implement new Sunday service that operates from 9:00 a.m. to 6:00 p.m., and using current cost per hour data the estimated annual operating costs would be \$20,232 for each vehicle operated.
- For both expansions of Saturday services and to implement new Sunday service, vehicles in the current fleet would be used so no immediate additional capital costs would be incurred.

### ***Ridership***

- While expanding weekend hours is the top priority of current customers, more Saturday service and new service on Sunday does not lend itself to large ridership numbers. However, to the customers who need these trips -- especially to access jobs -- these trips are critical.

## **Alternative #2: Expand Service to Charlottesville**

Another improvement noted by survey respondents was to offer more service to Charlottesville. Currently, there are three trips to and from Charlottesville Monday through Friday. Trips are scheduled to Charlottesville at 6:30 a.m., 8:00 a.m., and 11:00 a.m., and return service to Greene County departs Charlottesville at 8:30 a.m., 11:00 a.m., and 2:30 p.m. The scheduling of trips to Charlottesville requires a 24-hour call ahead to the transit office.

Under this alternative service to Charlottesville and Albemarle County would be expanded by adding two additional trips (one morning and one afternoon).

### ***Advantages***

- Offers expanded mobility for customers to services in Charlottesville.
- Responds to top need expressed by customers through the on-board rider survey.
- Utilizes current vehicles.

### ***Disadvantages***

- Requires additional operating costs for expanded service.

- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.

#### *Expenses and Funding Sources*

- To expand Charlottesville service by two trips daily, and using current cost per hour data the estimated annual operating costs would be \$67,439.

#### *Ridership*

- Based on the rider survey results, there would be increase in overall ridership to Charlottesville if additional trips are added to the current service.

### **Alternative #3: New Service to Orange**

When considering expanding services in the region, Greene County Transit could consider new service to Orange. A new dental facility that will serve people with lower incomes has opened in Orange, and the need to connect Greene County residents to this facility was expressed by one of the community stakeholders. This proposed service could involve a fixed schedule service between Greene County and Orange that includes specific pickup locations and time points along with the flexibility to pick up customers who live off the route. The schedule could be developed in consultation with the dental center to determine which days of the week would be needed for this proposed new service. It would also involve marketing to ensure residents are aware of the service.

#### *Advantages*

- Provides access to an important medical location outside Greene County.
- Offers the opportunity to connect with another provider in the region (Town of Orange Transit), expanding mobility options for Greene County residents.

#### *Disadvantages*

- Would involve service planning to determine which days of the week would be appropriate for service.
- Additional operating costs to implement new service, as well as increased capital costs if a new vehicle is required to provide service.
- Service would initially be focused only on one key destination.

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### *Expenses and Funding Sources*

- Assuming the service would operate three days a week with two trips between Greene County and Orange, estimated annual vehicles hours would be 936. Using Greene County Transit's cost per hour of \$43.23, the new service to Orange would cost about \$ 40,463 annually in operating expenses.
- With an average farebox recovery of 9.5%, the net deficit for this expansion would be \$36,620.

### *Ridership*

- While demand would be better determined after more detailed service planning, based on the current trips per hour for the Greene County Transit system this service would likely result in about 4,100 additional passenger trips each year.

### **Alternative #4: New Service to Madison**

When considering expanding services in the region, Greene County Transit can also consider Madison. This location was identified by current customers as one area they cannot currently access by public transportation, but would like to in the future. In addition, Greene County Transit staff noted that the Department of Motor Vehicles (DMV) and other important destinations are located in Madison and would help generate trips there. This alternative only proposes that this new service operate one day a week in order to gauge interest and demand. Similar to the proposed Orange service, it could operate on scheduled basis between Greene County and Orange along with the flexibility to pick up customers who live off the route. It would also involve marketing to ensure residents are aware of the service.

### *Advantages*

- Provides access to important locations outside Greene County.
- Responds to need expressed by customers through the on-board rider survey.

### *Disadvantages*

- Would involve service planning to determine which day of the week would be appropriate for service.
- Additional operating costs to implement new service, as well as increased capital costs if a new vehicle is required to provide service.

### *Expenses and Funding Sources*

- Assuming the service would operate one day a week with two trips between Greene County and Madison, estimated annual vehicles hours would be 312. Using Greene County Transit's cost per hour of \$43.23, the new service to Orange would cost about \$ 13,488 annually in operating expenses.
- With an average farebox recovery of 9.5%, the net deficit for this expansion would be \$12,608.

### *Ridership*

- While demand would be better determined after more detailed service planning, based on the current trips per hour for the Greene County Transit system this service would likely result in about 1,248 additional passenger trips each year.

### **Alternative #5: Increased Marketing Efforts**

While Greene County Transit works to get information on their services out to the public, and regular riders are aware of these services, there are additional marketing strategies that could be employed to help new riders who are not familiar with the system. These efforts can include improvements to the Greene County Transit website, and as noted earlier, more detailed information on services that are available

### *Advantages*

- Provides riders with additional information on Greene County Transit services.
- Improves the visibility of Greene County Transit within the community.

### *Disadvantages*

- New services would involve the development of new brochures with schedule information.

### *Expenses and Funding*

- Costs to add information to the Greene County Transit website would be minimal. If new service was implemented, there would be additional printing costs.

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### *Ridership*

- It is likely that expanding marketing efforts and providing information about transit services in a variety of ways will result in a small increase in ridership.

## ORGANIZATIONAL ALTERNATIVES

Organizational alternatives include proposals for potential changes that affect the way that transit is guided, administered, and/or managed in Greene County. These opportunities are discussed below.

### **Organizational Alternative #1: Transit Advisory Committee (TAC)**

While Greene County Transit formed a Committee to serve in an advisory role for this TDP, and conducts regular outreach in the community, many transit agencies have found that it is helpful for them to have an ongoing TAC. This TAC is comprised of community stakeholders who have an interest in preserving and enhancing transit in the community. While it is recognized that Greene County Transit has previously reached out to a variety of agencies or organizations—at times with limited success — ideally Committee members would include representatives from the following:

- Greene County Department of Social Services
- Greene County Economic Development Authority
- Greene County Health Department
- Jefferson Area Board for Aging
- Greene County Planning and Zoning Department
- Human Service Agencies
- Disability Advocates
- Interfaith Council
- Elected Official Liaison

The role of a TAC is to help the transit program better meet mobility needs in the community by serving as a link between the citizens served by the various entities and public transportation. A TAC is a good community outreach tool for transit programs, as having an ongoing dialogue with stakeholders allows for a greater understanding for transit staff of transit needs in the community, as well as greater understanding by the community of the various constraints faced by the transit program. Working with the proposed TAC, Greene County Transit can determine how often the committee needs to meet to ensure members are engaged in activities and efforts.

### *Advantages*

- Provides a forum for dialogue between the community and the transit program.
- Provides a venue for community networking.
- Can be a good community relations and marketing tool.

### *Disadvantages*

- Takes staff time to organize and document committee meetings and initiatives.

### *Expenses and Revenues*

- The expenses associated with forming a TAC are modest and include the cost associated with the staff time spent planning and organizing the meetings, as well as any printing and presentation materials needed for the meetings.

### *Ridership*

- While forming a TAC will not have a direct effect on ridership, it may generate ideas that will help boost ridership.

## **Organizational Alternative #2: Assess Scheduling and Dispatching Process**

Currently, Greene County Transit records trip requests by writing the origin and destination on message forms and then transferring this information to a driver pickup log. Some standing pickups are maintained on a driver log, but a review indicates the majority of trips are manually written on the log each time a ride is scheduled.

Greene County Transit could assess the current process and consider modifications to the scheduling system. Possible changes could involve eliminating the two-part process by logging the trip directly onto a driver log. Another possibility would be to enter information into a spreadsheet format to reduce the number of times the same information needs to be recorded. Lastly, since Greene County Transit will continue to be a system that is primarily a demand-response service, a basic scheduling software program could be considered so that customer information and trips can be maintained in a database.

### *Advantages*

- Could provide a more efficient scheduling system, and reduce need to write the same information multiple times.
- May allow for staff to work on other administrative functions.
- Maintaining electronic records of trips would allow greater analysis for future service planning efforts, i.e. determining origins and destinations with the greatest demand for use in planning possible scheduled services.

### *Disadvantages*

- There would be both software and hardware costs if it was determined that a scheduling program was needed.

### *Expenses and Funding Sources*

- As noted, the only expenses would be if it was determined that a software program was appropriate. Costs would vary depending on the software. A typical baseline program would be approximately \$75,000-\$100,000. A more extensive program that included Automated Vehicle Locators (AVL) or Mobile Data Terminals (MDT) could result in costs between \$250,000 and \$300,000.

### *Ridership*

- While efforts to improve the scheduling process may not have a direct effect on ridership, it would provide the opportunity to respond to future demand for Greene County Transit services.

## **ADDITIONAL CONSIDERATIONS**

### **Regional Connections**

Currently, Greene County Transit services are for the most part operated independently of other transit systems and other transportation providers in the region. However, the mobility needs of Greene County residents often cross jurisdictional lines. In addition, there is a need to look at services from a regional perspective to identify coordination opportunities and to reduce duplication of service if they exist.

Therefore, Greene County Transit can continue to be more involved in regional efforts. This could include:

- Greater participation on the Coordinated Human Service Mobility (CHSM) Planning Committee that meets several times a year, and that is currently working with DRPT on a CHSM Plan update for the region.
- Increased networking with transportation providers in the region.
- Assessing coordination opportunities. For instance, the Foothills Area Mobility System is now operating service between Culpeper and Charlottesville – going through Greene County.

## SUMMARY

This chapter provided a number of alternatives for Greene County Transit to consider with regard to public transit services over the next six years. Table 4-1 provides a summary of these proposals.

These alternatives were presented to the TDP Advisory Committee for review and comment in October, 2011. The Committee was asked to decide which alternatives should move forward to the six-year plan, as well as to provide any additional alternatives that may have been overlooked thus far. The chosen alternatives were carried forward to the six-year plan, which is described in Chapter 5.

**Table 4-1: Greene County Transit TDP - Summary of Alternatives**

<b>Project Description</b>	<b>Purpose</b>	<b>Annual Revenue Service Hours*</b>	<b>Annual Operating Expenses</b>	<b>Capital Expenses</b>	<b>Proposed Funding Sources</b>	<b>Estimated Annual Ridership</b>
Service Alternative #1: Expanded Weekend Service	Offer expanded mobility for transit riders on weekends. Responds to top need expressed by current customers.	572	\$ 24,728	\$ -	S.5311 and local	1,150
Service Alternative #2: More Frequent Service to Charlottesville	Expand mobility options to locations in Charlottesville and Albemarle County.	1,560	\$ 49,249	\$ -	S. 5311 and local	6,240
Service Alternative #3: New Service to Orange	Provide transportation to important medical facility. Offer opportunity to connect with other regional transportation services.	936	\$ 40,463	\$ 55,000	S.5311 and local	4,100
Service Alternative #4: New Service to Madison	Provide transportation to location identified by current customers.	312	\$ 13,488	\$ 55,000	S.5311 and local	1,248
Service Alternative #5: Increased Marketing Efforts	Provide customers with additional information on transit services. Improve visibility of Greene County Transit in community.	-	\$ 5,000	\$ -	S.5311 and local	-
Organizational Alternative #1: Transit Advisory Committee (TAC)	Provide a forum for dialogue between the community and Greene County Transit. Increase community relations and networking.	-	minimal	\$ -	n.a.	-
Organizational Alternative #2: Assess Scheduling and Dispatching Process	Determine if technology could help ensure more efficient scheduling system.	-	will vary depending on assessment	\$ -	S. 5311 and local	-
<b>TOTALS</b>		<b>3,380</b>	<b>\$ 132,928</b>	<b>\$ 110,000</b>		<b>12,738</b>

\* Per vehicle for expanded weekend service



## Chapter 5

# Operations Plan

### INTRODUCTION

The development of the Greene County Transit TDP has included four technical memoranda, which provided an overview and analysis of public transit services in the County; discussed goals, objectives, and standards; analyzed the need for transit services; and developed potential service and organizational alternatives that could be implemented by Greene County Transit over the six-year period. The process has been guided primarily by Greene County Transit staff and the TDP Advisory Committee, with input from the DRPT and other community stakeholders.

This operations plan details the specific projects that Greene County Transit has chosen to implement for the six-year plan, including both service and organizational initiatives. The plan includes the following elements:

- Expanded weekend service,
- More frequent service to Charlottesville and Albemarle County,
- New service to Orange,
- New service to Madison,
- Assessment of scheduling software,
- Formation of an ongoing advisory committee.

Chapters 6 and 7 provide the companion capital and financial plans to support this operations plan. These recommendations stemmed from this TDP process. These projects will need to be added to the Statewide Transportation Improvement Plan (STIP) upon adoption of this plan.

Each proposal is described, along with the estimated expenses and proposed revenues (in FY 2012 costs) and estimates of ridership for service proposals, and recommended implementation year for each. The costs are represented in FY 2012

dollars for this chapter so that the proposals can be compared to one another using the same cost structure. The Financial Plan (Chapter 7) presents slightly higher expenses, depending upon the implementation year, reflecting a 3% annual rate of inflation. The funding levels are based on typical funding split ratios among federal, state, and local sources.

## EXPANSION OF CURRENT SERVICES

### Expanded Weekend Service

Currently, Greene County Transit provides demand-response services in the County on Saturdays from 9:00 a.m. to 4:00 p.m. No services are provided on Sunday. This proposal would expand service on Saturday by two hours (from 4:00 p.m. to 6:00 p.m.) and implement new service on Sunday from 9:00 a.m. to 6:00 p.m.

#### *Expenses and Funding Sources*

- Using Greene County's current cost per hour, expanding Saturday and implementing new Sunday service would result in approximately 572 hours per vehicle needed and \$24,728 in annual operating costs per vehicle. No capital costs would be required.
- Assuming a farebox recovery of 9.5%, the net deficit for this service expansion is estimated to be would be \$22,378 (per vehicle). With current funding ratios of 50% Federal Section 5311, 35% local, and 15% State, estimated funding for this proposed expansion (per vehicle) would be as follows:

Federal:	\$11,189
State:	\$3,357
County:	\$7,832

It should be noted that the precise amounts for State funding are subject to availability in the Commonwealth Transportation Fund.

#### *Ridership*

- While expanding weekend hours is the top priority of current customers, more Saturday service and new service on Sunday does not lend itself to large ridership numbers. Assuming ridership to be about half of current trips

per hour, estimated ridership for this proposed service expansion would be about 1,150 annual trips per vehicle operated.

### ***Implementation***

- This service expansion is scheduled for implementation in FY 2013, assuming funding is available.

### **Expanded Service to Charlottesville**

Currently, there are three trips to and from Charlottesville Monday through Friday. Trips are scheduled to Charlottesville at 6:30 a.m., 8:00 a.m., and 11:00 a.m., and return service to Greene County departs Charlottesville at 8:30 a.m., 11:00 a.m., and 2:30 p.m. Survey respondents noted the need for more service to Charlottesville, and the Greene County TDP Advisory Committee confirmed that the most feasible method for expanding service would be to add two additional trips -- one morning and one afternoon.

### ***Expenses and Funding Sources***

- Using Greene County's current cost per hour, expanding service to Charlottesville as outlined in this proposal would result in approximately 1,560 hours and \$67,438 in annual operating costs per vehicle. Assuming current vehicles could be used no capital costs would be required.
- Assuming a farebox recovery of 9.5%, the net deficit for this service expansion is estimated to be would be \$61,032. With current funding ratios of 50% Federal Section 5311, 35% local, and 15% State, estimated funding for this proposed expansion would be as follows:

Federal:	\$30,516
State:	\$9,155
County:	\$21,361

It should be noted that the precise amounts for State funding are subject to availability in the Commonwealth Transportation Fund.

### *Ridership*

- Using current ridership levels while considering that some current customers may use one of the new trips in place of a current one, estimated ridership for this proposed service expansion would be about 6,240 annual trips.

### *Implementation*

- This service expansion is scheduled for implementation in FY 2014, assuming funding is available.

## **NEW SERVICES**

### **New Service to Orange**

This proposal involves new scheduled service between Greene County and Orange that would provide access to a dental facility that serves people with lower incomes and connections to other transportation providers in the region. While additional service planning and coordination with the dental facility would be needed to determine which days of the week would be appropriate for service, this proposal calls for two trips a day between Greene County and Orange, three days a week.

### *Expenses and Funding Sources*

- Assuming the service would operate three days a week with two trips between Greene County and Orange, estimated annual vehicles hours would be 936. Using the current cost per hour of \$43.23, the new service to Orange would cost about \$ 40,465 annually in operating expenses.
- With an average farebox recovery of 9.5%, the net deficit for this expansion would be \$36,620.
- With current funding ratios of 50% Federal Section 5311, 35% local, and 15% State, estimated funding for this proposed expansion would be as follows:

Federal:	\$18,310
State:	\$5,493
County:	\$12,817

It should be noted that the precise amounts for State funding are subject to availability in the Commonwealth Transportation Fund.

### *Ridership*

- While demand would be better determined after more detailed service planning, based on the current trips per hour for the Greene County Transit system this service would likely result in about 4,100 additional passenger trips each year.

### *Implementation*

- This service expansion is scheduled for implementation in FY 2015, assuming funding is available.

### **New Service to Madison**

As an additional opportunity to expand mobility in the region, this proposed service involves new scheduled service from Greene County to Madison. As noted in Chapter 4, this location was identified by current customers as one area they cannot currently access by public transportation but would like to in the future. This service is proposed to operate one day a week in an effort to provide some basic mobility while also gauging interest and demand.

### *Expenses and Funding Sources*

- Assuming the service would operate one day a week with two trips between Greene County and Madison, estimated annual vehicles hours would be 312. Using the current cost per hour of \$43.23, the new service to Madison would cost about \$13,488 annually in operating expenses.
- With an average farebox recovery of 9.5%, the net deficit for this expansion would be \$12,608.
- With current funding ratios of 50% Federal Section 5311, 35% local, and 15% State, estimated funding for this proposed expansion would be as follows:

Federal:	\$6,103
State:	\$1,831
County:	\$4,272

It should be noted that the precise amounts for State funding are subject to availability in the Commonwealth Transportation Fund.

### *Ridership*

- While demand would be better determined after more detailed service planning, based on the current trips per hour for the Greene County Transit system this service would likely result in about 1,248 additional passenger trips each year.

### *Implementation*

- This service expansion is scheduled for implementation in FY 2016, assuming funding is available.

## **SCHEDULING AND DISPATCHING TECHNOLOGY UPGRADE**

As noted in Chapter 4, Greene County Transit can consider improvements to current scheduling process by evaluating the use of a basic scheduling software program so that customer information and trips can be maintained in a database and trips scheduled more efficiently. Greene County Transit can apply to DRPT for a demonstration/technology grant to conduct a feasibility study that would evaluate current software scheduling programs and recommend the appropriate one for Greene County Transit.

### *Implementation*

- The timing for the feasibility study would be dependent on the application to DRPT, approval of funds, and a possible Request for Proposal (RFP) process with appropriate firms that could conduct the study.

## **ONGOING TRANSIT ADVISORY COMMITTEE**

Greene County Transit conducts regular outreach into the community, and convened a committee to serve in an advisory capacity for this TDP. A combination of these efforts would be to form an ongoing TAC as outlined in Chapter 4. The TAC would allow Greene County Transit to gain additional input on mobility needs in the community, and also serve as an outreach tool to educate key stakeholders and the public on current and new services. Typical advisory committees meet quarterly during the year, so costs associated with forming a TAC are low while at

the same time it provides an important forum for ongoing interaction with the community.

***Implementation***

- The formation of the TAC can begin as soon as possible in 2012.



## **Chapter 6**

# **Capital Improvement Plan**

### **INTRODUCTION**

This section of the TDP describes the major capital projects (vehicles, facilities, and equipment) needed to support the provision of public transportation in Greene County for the six-year period covered by this TDP.

### **VEHICLE REPLACEMENT AND EXPANSION PROGRAM**

As described in Chapter 1, Greene County Transit owns 17 vehicles. Sixteen are used for revenue service. These vehicles range in model years from 2005 to 2011, and three are currently scheduled for replacement in FY 2012.

The vehicle inventory, with the estimated replacement years, is provided as Table 6-1. The proposed additional weekend service and service to Charlottesville would not require additional vehicles. The proposed new service to Orange and Madison would require expansion by one vehicle in FY 2015.

### **FACILITIES**

Greene County is not currently in need of any additions to its operating and maintenance facility.

**Table 6-1: Greene County Transit Vehicle Inventory and Replacement Schedule**

<b>Local Fleet Number</b>	<b>Model Year</b>	<b>Manufacturer</b>	<b>Model and Type</b>	<b>Seating Capacity</b>	<b>Wheel-chair Stations</b>	<b>Condition</b>	<b>Mileage 9/19/11</b>	<b>Estimated Replacement Year</b>
C-4	2005	Chevrolet	Supreme	12	2	Fair	154,313	2013
C-6	2005	Chevrolet	Supreme	12	2	Fair	90,520	2012
C-7	2006	Chevrolet	Supreme Bus C5500	17	0	Good	112,965	2012
C-8	2007	Chevrolet	Supreme Bus C5500	17	0	Good	104,892	2012
D-4	2007	Dodge	Caravan	8	0	Good	85,648	2013
C-10	2008	Chevrolet	Uplander	7	0	Good	83,471	2015
C-11	2008	Chevrolet	Supreme	14	2	Good	74,134	2015
C-12	2008	Chevrolet	Supreme	14	2	Good	89,221	2015
C-3	2009	Chevrolet	Supreme	14	2	Good	36,756	2016
C-13	2009	Chevrolet	Supreme	14	2	Good	65,963	2016
F-1	2010	Ford	E350	14	2	Excellent	19,297	2017
C-14	2010	Chevrolet	Supreme	14	2	Excellent	14,414	2017
D-1	2010	Dodge	Caravan	7	1	Excellent	16,975	2015
D-3	2010	Dodge	Caravan	7	0	Excellent	3,153	2015
C-1	2011	Chevrolet	Supreme	14	2	Excellent	15,185	2018
C-15	2011	Chevrolet	Supreme	14	2	Excellent	11,894	2018

## TECHNOLOGY

As discussed in Chapter 5, this TDP includes studying the feasibility of implementing scheduling software. The technology equipment to be used to acquire this software and to upgrade computer hardware would be included in this study, and is therefore not included specifically in the TDP.



## Chapter 7

### Financial Plan

#### INTRODUCTION

This chapter provides a financial plan for funding existing and proposed transit services in Greene County for the six-year planning period. It should be noted that there are currently a number of unknown factors that will likely affect transit finance in the County over the course of this planning period, including the reauthorization of SAFETEA-LU, and the future economic condition of the County and the Commonwealth of Virginia. The budgets were constructed with the information that is currently available. The funding ratios are based on historical funding ratios for rural transit programs in the Commonwealth. The exact revenue available each year will be dependent upon the availability of funding from the federal Section 5311 program, the Commonwealth Transportation Fund, and local sources.

#### OPERATING EXPENSES AND FUNDING SOURCES

Table 7-1 provides the financial plan for transit operations for Greene County Transit including operating, maintenance, and administrative expenses. The six-year plan includes the current base service and then adds the projects discussed in the Operations Plan (Chapter 5). This plan is modest in scope, reflecting the current economic climate.

As the table indicates, the annual operating expenses for Greene County Transit are projected to grow from about \$653,114 to \$1,019,055 over the six-year planning period. This figure accounts for inflation and includes expanded weekend service, expanded service to Charlottesville, and new service to Orange and Madison.

Pending the reauthorization of SAFETEA-LU, it is unknown what the level of federal transit funds will be. It should be noted that these levels have generally risen

**Table 7-1: Greene County TDP Financial Plan for Operations**

<b>Projects (1)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<i><b>Current Annual Revenue Hours (2)</b></i>	12,888	12,888	12,888	12,888	12,888	12,888
Expanded Saturday service	-	300	300	300	300	300
Sunday service		1,350	1,350	1,350	1,350	1,350
Expanded service to Charlottesville	-	-	1,560	1,560	1,560	1,560
New service to Orange	-	-	-	936	936	936
New service to Madison	-	-	-	-	312	312
<b>Total Transit Service Hours</b>	<b>12,888</b>	<b>14,538</b>	<b>16,098</b>	<b>17,034</b>	<b>17,346</b>	<b>17,346</b>
<i><b>Projected Operating Expenses (3)</b></i>						
Cost Per Revenue Hour	\$ 50.68	\$ 52.20	\$ 53.76	\$ 55.38	\$ 57.04	\$ 58.75
Operating Expenses - Current Level of Service (4)	\$ 653,114	\$ 672,707	\$ 692,889	\$ 713,675	\$ 735,086	\$ 757,138
Expanded Saturday service	\$ 15,660	\$ 16,130	\$ 16,614	\$ 17,112	\$ 17,626	\$ 17,626
Sunday service	\$ 70,471	\$ 72,585	\$ 74,762	\$ 77,005	\$ 79,315	\$ 79,315
Expanded service to Charlottesville	\$ -	\$ 83,876	\$ 86,392	\$ 88,984	\$ 91,653	\$ 91,653
New service to Orange	\$ -	\$ -	\$ 51,835	\$ 53,390	\$ 54,992	\$ 54,992
New service to Madison	\$ -	\$ -	\$ -	\$ 17,797	\$ 18,331	\$ 18,331
<b>Total Projected Operating Expenses</b>	<b>\$ 653,114</b>	<b>\$ 758,838</b>	<b>\$ 865,479</b>	<b>\$ 943,278</b>	<b>\$ 989,373</b>	<b>\$ 1,019,055</b>

*Notes:*

(1) Implementation years are estimated. Implementation will be based on funding availability.

(2) Based on FY 2010.

(3) Based on FY 2012 Budget to DRPT.

(4) Assumes 3% rate of inflation each year.

**Table 7-1 (continued)**

<b>Anticipated Funding Sources</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<i><b>Federal</b></i>						
Section 5311	\$ 302,057	\$ 343,374	\$ 391,629	\$ 426,833	\$ 447,691	\$ 461,122
Subtotal, Federal	\$ 302,057	\$ 343,374	\$ 391,629	\$ 426,833	\$ 447,691	\$ 461,122
<i><b>State</b></i>						
Formula Assistance	\$ 73,802	\$ 103,012	\$ 117,489	\$ 128,050	\$ 134,307	\$ 138,337
<i><b>Local</b></i>						
Local Contribution	\$ 228,255	\$ 240,362	\$ 274,140	\$ 298,783	\$ 313,384	\$ 322,786
Revenues- Farebox (1)	\$ 49,000	\$ 72,090	\$ 82,220	\$ 89,611	\$ 93,990	\$ 96,810
Total Local	\$ 277,255	\$ 312,452	\$ 356,361	\$ 388,395	\$ 407,374	\$ 419,596
<b>Total Projected/Proposed Operating Funds/Revenues</b>	<b>\$ 653,114</b>	<b>\$ 758,838</b>	<b>\$ 865,479</b>	<b>\$ 943,278</b>	<b>\$ 989,373</b>	<b>\$ 1,019,055</b>

*Notes:*

(1) Assumed at 9.5%.

with each transportation funding reauthorization. These funds are shown to increase with inflation, along with the expenses. State funds are also included, using the typical current funding level, which is about 15% of the net deficit.

## **VEHICLE PURCHASE EXPENSES AND FUNDING SOURCES**

Table 7-2 offers the financial plan for vehicle replacement over the six-year period. As discussed in Chapters 6, this plan includes the replacement of 14 vehicles between FY 2012 and FY 2017, as well as the purchase of one vehicle in FY 2015. The funding split is generally assumed to be 80% federal, 10% state, and 10% local.

## **FACILITY IMPROVEMENT EXPENSES AND FUNDING SOURCES**

The financial plan for facilities, equipment, and other capital is provided in Table 7-3. These expenses are those associated with passenger amenity and information improvements, as well as the security cameras, tools, and routine computer upgrades. These expenses are also assumed to be funded with federal (80%), state (10%), and local (10%) funds.

**Table 7-2: Greene County TDP Financial Plan for Vehicle Replacement and Expansion**

Number of Vehicles	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Replacement	3	2	0	5	2	2
Expansion	0	0	0	1	0	0
Total Vehicles	3	2	0	6	2	2

*Vehicle Costs*

Replacement	\$	165,000	\$	82,400	\$	-	\$	202,154	\$	123,806	\$	127,520
Expansion	\$	-	\$	-	\$	-	\$	60,100	\$	-	\$	-
Total Projected Vehicle Costs	\$	165,000	\$	82,400	\$	-	\$	262,254	\$	123,806	\$	127,520

*Anticipated Funding Sources*

Federal	\$	132,000	\$	65,920	\$	-	\$	209,804	\$	99,045	\$	102,016
State	\$	16,500	\$	8,240	\$	-	\$	26,225	\$	12,381	\$	12,752
Local	\$	16,500	\$	8,240	\$	-	\$	26,225	\$	12,381	\$	12,752
Total Vehicle Funding	\$	165,000	\$	82,400	\$	-	\$	262,254	\$	123,806	\$	127,520

**Table 7-3: Greene County TDP Financial Plan for Facilities, Equipment, and Other Capital**

Projects	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Miscellaneous Technology Equipment		\$ 103	\$ 106	\$ 109	\$ 113	\$ 116
Scheduling and Dispatch Feasibility Study		\$ 35,000				
<b>Total Projected Non-Vehicle Capital Expenses</b>	<b>\$ -</b>	<b>\$ 35,103</b>	<b>\$ 106</b>	<b>\$ 109</b>	<b>\$ 113</b>	<b>\$ 116</b>
<b>Anticipated Funding Sources</b>						
Federal	\$ -	\$ 17,582	\$ 85	\$ 87	\$ 90	\$ 93
State	\$ -	\$ 15,760	\$ 11	\$ 11	\$ 11	\$ 12
Local	\$ -	\$ 1,760	\$ 11	\$ 11	\$ 11	\$ 12
<b>Total Projected Non-Vehicle Capital Revenue</b>	<b>\$ -</b>	<b>\$ 35,103</b>	<b>\$ 106</b>	<b>\$ 109</b>	<b>\$ 113</b>	<b>\$ 116</b>

## **Chapter 8**

# **TDP Monitoring and Evaluation**

### **INTRODUCTION**

The Greene County Transit TDP, developed over a five-month period, has included the following tasks:

- Detailed documentation and analysis of current public transportation services;
- A peer review showing the service and financial characteristics of transit programs similar in scope to Greene County Transit;
- A transit needs analysis, including demographic analysis, land use analysis, a review of relevant planning documents, stakeholder interviews, and rider surveys;
- The development of service and organizational alternatives;
- The development of recommendations for transit improvements for inclusion in the TDP, with improvements tentatively identified by year; and
- A financial plan highlighting the funding requirements and potential funding sources for the recommended transit improvements in the region.

The plan is modest in nature, but does include some growth. Expanded service hours have been included in the plan and they are attached to particular years, but these projects may slip to future years if the proposed funding arrangements do not come to fruition. This TDP may need to be updated during the six-year planning period to reflect funding availability. This TDP will need to be formally adopted by the Greene County Board of Supervisors.

## **COORDINATION WITH OTHER PLANS AND PROGRAMS**

The study team for this TDP consulted a number of relevant plans and programs during the development of the six-year plan. The following documents were reviewed, with their associated recommendations incorporated where appropriate:

- Greene County TDP (2010)
- Greene County Comprehensive Plan
- Multimodal Corridor Study for US 29 and US 33
- Thomas Jefferson Planning District Commission Coordinated Human Service Mobility (CHSM) Plan
- Four County Transit TDP (2009)

The projects included in this TDP should be reflected in these area plans and studies as they are updated. The formation of an ongoing advisory committee and involvement in regional transportation meetings included in Chapter 4 would serve as appropriate mechanisms to ensure that the projects incorporated within this TDP are included in appropriate plans. As mentioned in previous chapters, the recommended projects from this TDP will need to be incorporated into the public transportation element of the DRPT State Transportation Improvement Program (STIP).

## **SERVICE PERFORMANCE MONITORING**

A number of proposed service standards were developed for Greene County Transit (Chapter 2) for this TDP. The purpose of including these standards was to develop some objective measurements of performance that Greene County Transit can use to monitor transit services in the future and make objective, performance-based service planning decisions. It is recommended that Greene County Transit monitor performance monthly.

## **ANNUAL TDP MONITORING**

For this TDP it is particularly important that Greene County Transit monitor the progress each fiscal year. Projects may also need to shift from one year to the next if funding is not available. Alternatively, if the reauthorization of the federal transportation funding program is more generous than SAFETEA-LU, projects could potentially be implemented ahead of schedule or additional projects could be added to the TDP.

DRPT guidance currently requires that grantees submit an annual TDP update letter that describes the progress that has been made toward implementing the adopted TDP. This letter should include the following elements:

- Operating statistics for the 12-month period, including the ridership attributed to any new proposals implemented as a result of the TDP.
- Any changes to system goals, objectives, or service standards.
- A description of any service or facility improvements that have been implemented during the 12-month period.
- An update to the TDP recommendations to identify additional projects, deferment of projects to later years, or elimination of projects.
- Updates to the financial plan to more accurately reflect current funding scenarios.



# **Appendix A**

## **On-Board Rider Survey**





## Greene County Transit ON-BOARD RIDER SURVEY

Greene County Transit is currently conducting a Transit Development Plan (TDP). The purpose of this study is to develop a five-year plan for public transportation services in the County. As part of our planning process, it is important for us to understand the needs of our customers and to solicit input concerning our services. ***Thank you for taking the time to complete the following brief survey!***

- 
- 
1. In what city, town, or community do you live? \_\_\_\_\_
  2. What is the purpose of your Greene County Transit trip today? You may check more than one.

<input type="checkbox"/> (1) Work	<input type="checkbox"/> (4) Social/ Recreation	<input type="checkbox"/> (7) Errands/Personal Business
<input type="checkbox"/> (2) Shopping	<input type="checkbox"/> (5) Medical	<input type="checkbox"/> (8) Attend Senior Center
<input type="checkbox"/> (3) School	<input type="checkbox"/> (6) Government Service Agency	<input type="checkbox"/> (9) Attend Senior Meal Site
<input type="checkbox"/> (10) Other: _____		
  3. How often do you use Greene County Transit services?

<input type="checkbox"/> (1) 4 times per week or more	<input type="checkbox"/> (3) Once a week	<input type="checkbox"/> (5) Once a month
<input type="checkbox"/> (2) 2-3 times per week	<input type="checkbox"/> (4) 2-3 times per month	<input type="checkbox"/> (6) Less than once a month
  4. How did you find out about the Greene County Transit services?

<input type="checkbox"/> (1) Already knew	<input type="checkbox"/> (4) Senior Center Staff	<input type="checkbox"/> (8) Telephoned Greene County
<input type="checkbox"/> (2) Asked someone who uses the service	<input type="checkbox"/> (5) Other Agency Staff	<input type="checkbox"/> (9) Other: _____
<input type="checkbox"/> (3) Website	<input type="checkbox"/> (6) Brochure	
	<input type="checkbox"/> (7) Asked Driver	
  5. How long have you been using Greene County Transit services?

<input type="checkbox"/> (1) Six months or less	<input type="checkbox"/> (4) Between 1 and 2 years
<input type="checkbox"/> (2) Between six months and one year	<input type="checkbox"/> (5) More than 2 years
<input type="checkbox"/> (3) About one year	<input type="checkbox"/> (6) More than 5 years
  6. Including yourself, how many people live in your home? \_\_\_\_\_
  7. How many vehicles (cars, trucks, motorcycles) are available in the household where you live?

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4 or more
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  8. Was a car available today for this trip? ☐ Yes ☐ No
  9. Do you have a driver's license? ☐ Yes ☐ No
  10. Do you have Internet access? ☐ Yes ☐ No

OVER, PLEASE ➡

11. What do you like best about Greene County Transit services?

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12. What do you like least about Greene County Transit services?

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13. Are there places in the region where you would like to go on a regular basis, but you cannot get to because there is not a public transportation service available for the trip?

☐ No      ☐ Yes      If yes, from where to where? \_\_\_\_\_

14. Please rate your satisfaction with Greene County Transit services in the following areas:

	Very Satisfied (1)	Satisfied (2)	Unsatisfied (3)	Very Unsatisfied (4)
The trip scheduling process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephone customer service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On-time performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Days of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hours of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleanliness of the vehicles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driver courtesy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Usefulness of Greene County Transit website	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety and security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. If Greene County Transit were to make service improvements what would be your top three choices?

(1) \_\_\_\_\_ (2) \_\_\_\_\_ (3) \_\_\_\_\_

16. Please provide any comments you may have concerning public transportation in Greene County or in the region.

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***Thank you!***

## **Appendix B**

### **Transit Dependence Index**



## Appendix B: Transit Dependence Index (TDI)

Public transportation needs are defined in part by identifying the relative size and location of those segments within the general population most likely to be dependent upon some form of public transit services. Once the location of these transit dependent populations is determined and analyzed, it becomes possible to evaluate the extent to which current services meet the needs of community residents. To identify the areas of highest transportation need, the TDI was calculated for each of the Census Block Groups in the study area.

The TDI is an aggregate measure that utilizes recent data from the American Community Survey (ACS) five-year estimates and the United State Decennial Census to display relative concentrations of transit dependent populations within a study area. The following section describes the formula used to compute the TDI for each of these block groups, as well as a brief description of the six factors used in its calculation.

$$\text{TDI} = \text{PD} * (\text{AVNV} + \text{AVE} + \text{AVY} + \text{AVD} + \text{AVBP})$$

- PD: population per square mile
- AVNV: amount of vulnerability based on presence of no vehicle households
- AVE: amount of vulnerability based on presence of elderly adult population
- AVY: amount of vulnerability based on presence of youth population
- AVD: amount of vulnerability based on presence of disabled population
- AVBP: amount of vulnerability based on presence of below-poverty population

The input values for the population density (PD) factor follow the previously mentioned classification scheme of the stand-alone population density analysis. A block group with a population density greater than 2,000 persons per square mile is presented a value of four, while a block group with a population density greater than 1,000 persons per square mile and less than or equal to 2,000 is given a PD factor of three. Continuing in intervals of 500, a block group with a population density greater than 500 and less than or equal to 1,000 persons per square mile is presented a PD factor of two, while a block group with less than or equal to 500 persons per square mile and at least one resident is given a value on one. In the event of a block group having zero residents, that particular block group is presented a value of zero.

The following five independent variables represent specific socioeconomic characteristics of the residents in the study area, which are described in the previous bullets. These five factors are given a value that represents their prevalence in the analyzed block group. For each of the factors, an individual block group comprised of a

number of vulnerable persons or households that is below the average number for all block groups in the study area is presented with a value of one. A value of two is given to a block group where its vulnerable population is greater or equal to the study area average (SAA), but less than one and one-third times the SAA. A block group with a vulnerable population greater or equal to one and one-third the SAA, but less than one and two-thirds the SAA is presented with a value of three. This scoring scheme continues for a block group with a vulnerable population greater than one and two-thirds the SAA, but less than twice the SAA for a block group, which is presented a value of four. Finally, any block group that has a vulnerable population or household population that is more than twice the SAA for a block group is given the highest value of five. Once this process is completed for each of the five socioeconomic characteristics, the factors are plugged into the TDI equation in order to determine the transit dependence for each block group within the study area. Each individual block group is then given a TDI classification (very low, low, moderate, high, or very high) that is assigned in a manner similar to the independent variables in the TDI. The difference being that the TDI or dependent variable value in the formula replaces the previously described socioeconomic characteristics or independent variables. Thus, a block group with a TDI below the average TDI score for a block group in the study area is given a value of one or categorization of very low, and so on.

## **Appendix C**

### **Environmental Justice Index**



## Appendix C: Environmental Justice Index (EJI)

EJI is an aggregate measure that may be employed with mapping software to effectively display relative concentrations of racial and/or ethnic minorities and low-income residents throughout the study area. The structure for the EJI was introduced in a 2004 National Cooperative Highway Research Program report in order to offer “practitioners an analytical framework to facilitate comprehensive assessments of a proposed transportation project’s impacts on affected populations and communities.<sup>1</sup>” The application of the EJI within this needs assessment will ensure a high standard of social and economic equality, as outlined in Title VI of the Civil Rights Act of 1964, when evaluating potential modifications to the present public transportation services in the region.

Similar to both the TDI and TDIP, the data utilized for the EJI was compiled by the ACS’s five-year estimates, which enabled examination of socioeconomic characteristics at a block group level of analysis, and the United States Decennial Census, which provided the necessary geographic information (e.g., block group boundaries). The data employed by the EJI is described in the subsequent bulleted points, which follow the EJI formula and its three independent variables.

$$\text{EJI} = \text{PD} * \text{DVM} * \text{DVBP}$$

- PD: population per square mile
- DVM: degree of vulnerability based on presence of minority population
- DVBP: degree of vulnerability based on presence of below-poverty population

The EJI scoring system is nearly identical to the scoring system used by the TDI measure with the lone exception being the EJI measure’s utilization of two independent socioeconomic variables that are multiplied by the PD factor, which is different from the TDI measure’s use of five independent socioeconomic variables that are summed and multiplied by the PD factor. Subsequently, the score of the EJI will range from zero to 100, with a higher score indicating a block group where a larger proportion of minority

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<sup>1</sup>Forkenbrock, D. and Sheeley, J. 2004. *Effective Methods for Environmental Justice Assessment*. NCHRP Report 532. Transportation Research Board, National Research Council. Washington, DC: National Academy Press.

residents and/or low-income persons are present in an area with an increased population density. The score for the PD factor still ranges from zero to four, which was used in the TDI measure, and the score for the other two socioeconomic characteristics is determined in an equivalent manner as the five additional characteristics used in both the TDI and TDIP measures. Furthermore, the overall block group scores are then compared to the previously described SAA and each block group is accordingly placed into one of five categories (very low, low, moderate, high, or very high) within the classification scheme. This scheme is identical to the five-tier structure described in the TDI and TDIP measures.